

**Economic Analysis**  
**of the**  
**Pinelands**  
**Comprehensive**  
**Management**  
**Plan**

ECONOMIC ANALYSIS OF  
PINELANDS COMPREHENSIVE MANAGEMENT PLAN

November 20, 1980

Prepared for the Pinelands Commission with  
the assistance of Gloria L. Christian,  
James C. Nicholas and Joan E. Towles.

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## INTRODUCTION

This report has been prepared in response to Governor Byrne's request for additional information on the potential economic impact of the Pinelands Comprehensive Management Plan. On September 22, 1980, the Governor officially approved the Pineland Commission's Plan for the inner, or Preservation Area, of the Pinelands. In announcing his approval, he asked the Commission to address several issues which had been raised during the review of the plan. These questions were generated in part at a public hearing which the Governor personally conducted in Trenton on September 16. After listening to the testimony and reviewing additional comments registered that day, Governor Byrne approved the minutes of the Commission's August 8, 1980 meeting, thereby approving the Preservation Area Plan.

Several of the issues which the Commission was asked to address have been dealt with in the context of revisions to the plan, and will be touched upon only briefly here. One of these changes involved the establishment of a procedure to respond to individual owners of small lots who bought property in the Pinelands area before Executive Order 71 and who wished to build on it for their own use. The plan in effect "grandfathers" these lots and states that an individual may be exempted from the density requirement of the area in which



his parcel is located, as long as the following conditions are met: the property had to have been owned by him or a member of his immediate family on February 7, 1979; the dwelling unit will be the primary residence of the applicant; the parcel was not in common ownership with a contiguous parcel on February 7, 1979; and, the development of the dwelling unit otherwise complies with the minimum standards of this plan.

While the plan specifies the conditions for granting such exemptions, each municipality may design its own specific procedures and regulations for the exemptions. These procedures will be presented to the Commission for review during the certification process.

Another area which the Commission has addressed through revisions to the plan concerns the process for dealing with projects which obtained final development approval prior to the effective date of the Executive Order. The plan allows for relief from the density requirements for cases where the applicant had received final approval from a municipal planning board within the two year period preceding the moratorium. As is the case with single family exemptions, the development would have to meet all other environmental standards of the plan. Additionally, projects would have to meet or be modified to meet the per unit minimum lot size of one acre.

Another issue which the Governor requested the Commission to address was the legal justification for land use classifications based upon the indigenous relationship of landowners to the Pines. This explanation has been prepared by consultants to the Commission, and verifies the validity of

of this inclusionary policy. This policy was designed to address the needs of the existing residents of the Pinelands and provides an opportunity for their sons and daughters to maintain their connection with the region. Such provisions already serve the objectives of the state act and the Commission's policy of maintaining the character and cultural integrity of the area.

The additional economic information requested by the Governor has been assembled over the last few months and is the subject of this report. A summary of the findings are also incorporated in Part I of the Pinelands Comprehensive Management Plan. The report addresses the following issues: (a) the alleged depreciation or loss of property value in the Pinelands; (b) the issue of whether property values are already reduced through agricultural use and farmland assessment; (c) possible loss of assessed value to communities; and (d) additional costs to communities of implementing the plan.

The report begins with a description of the factors which dominate the regional economy, including industries such as agriculture, tourism, construction and resource extraction. It then proceeds to an estimate of impacts that the plan will have on the regional economy, both in a positive and negative sense. Because one objective of the state Pinelands act is to enhance agriculture in the region, particular attention is paid in this section to the plan's effect on agricultural activities. The report then discusses

the potential impact of the plan on land values, and compares the value of various parcels according to their assessed pre-plan and anticipated post-plan values. The program of Pinelands Development Credits, (PDC's) is also described in order to provide a framework for evaluating the potential market of the PDC's in the areas designated to receive the credits. Finally the report addresses the issue of local implementation costs, specifically those arising from possible changes in the municipal tax base, the costs associated with the conformance requirements and the day-to-day administration of the programs and standards mandated by the Pinelands plan. The costs of plan implementation are further analyzed in terms of the expenses which governments might experience if present trends, such as scattered and piecemeal development patterns, were allowed to continue.

As pointed out in Governor Byrne's September 22 statement, the Pinelands Protection Act mandates that the Commission adopt a plan which addresses the following goals:

1. Preserve and maintain the essential character of the existing Pinelands environment, including the plant and animal species indigenous thereto and the habitat thereof;
2. Preserve (in the case of the Preservation Area) an extensive and continuous land area in its natural state thereby assuring the continuation of a Pinelands environment which contains the unique and significant ecological and other resources representative of the Pinelands area.

The Comprehensive Management Plan which evolved over the past one and one-half years responds to the legislative mandates by providing a range of land uses and

management practices which attain the desired degree of protection and which involve both the public and private sectors in this process. While public acquisition is one element of the management program, large scale acquisition is neither fiscally attainable nor necessarily desirable from a social or economic perspective. The intent of the program is to utilize a variety of management techniques and to achieve the objectives of the acts while the land remains in private ownership, to the maximum extent practicable.

Given the scope of the planning effort and the intent to implement the programs in part within the context of private ownership, conflicts between interpretations of social benefit and private costs are inevitable. In this case costs are defined as foregone opportunities which a landowner cannot realize if the objectives of the state and federal legislation are to be met. It must be recognized that the economic objectives of certain landowners are inconsistent with the maintenance of the Pinelands character. When these various types of objectives conflict, the plan must respect the public interest as expressed in the Pinelands legislation.

The Comprehensive Management Plan seeks to preserve the social benefits flowing from the present allocation of land resources, which are in effect the benefits for which the Pinelands have been recognized. At the same time the plan provides for beneficial uses to all landowners, and sets out

a strategy to measure the suitability of future land uses in terms of their environmental impacts and compatibility with an area's existing character. The intent is to assure the continued flow of benefits which will accrue to society as a whole as well as individual property owners by managing the Pinelands resources properly. While the restrictions on the nature and type of development will be seen as a cost to some owners, the restrictions will in other cases actually enhance an individual's investment. However, owners will be able to continue their existing uses in most cases, and convert to certain other uses which will also produce beneficial returns.

In the body of this report the impacts of the Pinelands plan will be set out, so far as possible, so that the issue of Pinelands protection can be evaluated in the context of its overall benefits and costs to society and the private sector.

## I. SUMMARY

The Comprehensive Management Plan prepared by the Pinelands Commission is an effort to balance the environmental and economic objectives contained in both the state and federal legislation. These include the legislative direction "to protect, preserve and enhance the significant values of the resources" of the Pinelands, while recognizing existing economic activities within the area. The Commission is also to "provide for the protection and enhancement of such activities as farming, forestry, proprietary recreation facilities, and those indigenous industries and commercial and residential developments which are consistent with such purpose and provisions" of the legislation. It is believed that the Comprehensive Management Plan accomplishes the difficult task of balancing environmental and economic objectives. Indeed, it will generally protect and enhance the economic viability of the Pinelands Region.

Since the Commission's Plan restricts unconstrained growth and redirects planned growth into more suitable locations, some localized impacts will, of course, occur. While certain of these impacts may be viewed as negative, certain others including the reduction of the myriad costs of development sprawl must be viewed as positive aspects for the region's future. As with all plans which seek to redirect growth, shifts will occur in the region's economy from the growth patterns resulting from an unplanned and unconstrained situation.

Because of the historic nature of development in the Pinelands, (a tendency to locate at the fringes of the region) the shift is not as significant as in areas where pressure for land utilization is relatively uniform. An analysis of those locations presently under intense development pressure was a factor in selecting regional growth areas to accomodate future development.

#### Impact on the Economy

The Pinelands are not an isolated economic region. Rather, they are part of a broader South Jersey region which in turn, has intra and interstate economic relationships.

Within the South Jersey economic region, the major economic activities are agriculture, manufacturing, government (military) and services and trade (tourism and retirement industries), and construction.

The Comprehensive Management Plan seeks to protect and enhance agriculture in the Pinelands by preserving land for future expansion, and through a variety of programs and recommendations including the "right to farm." It should be noted that agriculture in the region has been expanding in the recent past. While there may be increased development pressure on farmland outside of the Pinelands due to less restrictive land use policies, recent efforts on the part of the State to devise programs for farmland preservation may offset much of the potential decline in active agricultural areas.

Manufacturing is mainly found in the western portion of the region with the vast majority being outside of the Pinelands. Nevertheless, the Pinelands must be viewed as a potential expansion area for manufacturing. There is no impediment in the plan to the growth of light manufacturing in areas where such activities would be likely to locate. The plan

would appear to negatively impact the growth of heavy manufacturing if suitable alternative sites outside the Pinelands are not available. The industry which is the most likely to expand into the Pinelands is glass manufacturing. This industry utilizes sand mined within the area and elsewhere. Since the Plan provides an exception for resource related industries in portions of the Pinelands, an opportunity for such expansion in an environmentally acceptable manner exists. Mining, particularly sand and gravel extraction will continue to be viable in major areas of the Pinelands.

The economic activity related to the extensive military and federal installations in the Pinelands are primarily influenced by considerations of national defense or other federal policies, rather than local development policies. The effect of the plan will be to accomodate expansion and continued use of such facilities while providing development in selected areas adjacent to same for the provision of necessary local services.

Tourism is rapidly expanding in the region due to the advent of casino gambling in Atlantic City and convenient access to the area's natural resources. By providing growth areas adjacent to Atlantic City, the plan is generally expected to accomodate development generated by the casino influence and should not affect this industry. Preservation of the natural resources of the Pinelands, while allowing low intensive and intensive use recreation facilities, will enhance this portion of the tourist industry. It is anticipated that the Plan will allow the latter to reach its fullest potential by limiting the competition of land-uses which would adversely affect the industry. By accomodating growth in the eastern portion of the Pinelands, the Plan should not



increase the conversion of seasonal shore housing beyond the pace already precipitated by casino related housing demands.

The retirement industry, particularly that related to retirement housing may be impacted by the Plan. It should be noted, however, that a major factor promoting retirement housing in the Pinelands was a lack of competition with demand for more conventional housing types. With the advent of casino development, many former retirement units are being converted. This trend, it is believed, would continue in the absence of a comprehensive plan.

Contrary to what may have been anticipated, the impact of the Comprehensive Mangement Plan is not expected to have a major impact on the construction industry. While land availability for housing has been limited by the Plan, growth, as projected, may be accommodated in regional growth centers, towns and Villages, as well as rural development areas. Additionally, the municipal reserve areas serve as a reservoir for growth should the plan's allocations fall short of accommodating projected demand. Since the Plan contains provisions relating to low, moderate, and middle income housing, it may be anticipated to result in more such units than would have occured. The major impact will be locational in nature due to the redistribution of growth. It should be noted again, that growth areas correspond greatly to the analysis of anticipated growth pressure. Continued monitoring of growth demand in the region, and an on-going amendment procedure contained in the plan, provide the flexibility to respond to localized and regional growth pressures as they arise.

Of additional interest from an economic standpoint is the shellfish industry which is located in the adjacent bays and estuaries to the

Pinelands. This Pinelands related industry accounts for approximately 40% of the total dockside value for the state or approximately \$2 million in 1978. Total commercial value is approximately 2.5 times higher than dockside value. The plan is expected to have a favorable impact upon the shellfish industry because of the industry's dependence upon protected waters emanating from within the Pinelands.

#### Impact on Land Values

By restricting unconstrained land use in portions of the Pinelands and redirecting growth to others, the Plan will affect land values both positively and negatively. The economic value of land is, of course, directly proportional to the intensity of the use to which it can be put. No existing uses of land in the Pinelands will be restricted by the Plan. In certain areas the intensity of future, but not present, use will be reduced. In other areas the future intensity will be increased. Owners of land in more restricted areas of the Pinelands, who intended to convert to a more intensive use in the future, may well not realize their increased value. The restrictions on use within certain areas of the Pinelands are necessary to achieve the objectives of both the federal and state legislation. It is believed that these restrictions are the minimum necessary to protect the nationally recognized resources of the Pinelands.

The laws of the United States and of the State of New Jersey protect a property owner from a "taking" of property by government. The Pinelands Plan cannot modify this protection, and indeed, does not attempt to. An issue is, however, raised of whether a property owner should be supported or not supported by government in the attainment of his or her investment objectives. This dilemma is not unique to the Pinelands Plan or to any plan at the local or regional level.

An analysis of the potential impacts of the Plan on land values reveals that the effect of the Plan will be highly variable depending on a number of diverse factors. These include the relative location of a property with relation to existing growth areas and development pressures, the highest and best use of the property in the pre-plan and post-plan situation, the natural characteristics of the property, its suitability for agriculture, the parcel size and configuration, road frontage, availability of utilities, as well as general market conditions. Property values in the Pinelands prior to the Plan have been estimated to range from an average of about \$300 per acre for properties under no current development pressure, upwards to an average of about \$3,600 per acre in areas under strong development pressure in immediate proximity to growth centers. Land values for the low and moderate development pressure categories, which are, perhaps, the most reflective of the majority of lands in the areas to be restricted under the Plan, range from an average of \$600 per acre to average of \$1,200 per acre respectively. The Plan will affect some parcels of land more adversely than others. In general, values in areas which are currently under low or no development pressure will not be affected since their current values fall within the range of values estimated for passive recreation and agricultural uses. Properties in areas subject to moderate to strong development pressures may be subject to some diminution in value depending on the extent to which the respective development rights are actually restricted by the Plan. It should be noted, however, that those areas which are subject to the strongest development pressures have been delineated as growth areas in the Plan. As a result, land values are likely to be enhanced due to the greater intensity of development that will occur in these areas.

The Pinelands Plan provides an additional use benefit to property owners in more restricted areas in the form of a Pinelands Development Credit (PDC). The allocation of credits is based upon the amount and nature of the lands owned. For property owners in a growth area to utilize the increased intensity allocated, they must acquire PDC's from the owners of more restricted lands. In this manner the Plan distributes the value benefits and costs among all property owners. Whether the value of the PDC will equal the value of any reduction will, of course, depend upon individual and market situations. However, in discussions regarding loss in value, the PDC's value must also be considered.

Although some consider development credits an experimental technique, there has been a great deal of experience with such systems, and with varying degrees of success, around the country. The major fault of most development credit plans has been that there was no area to which the development credit could be transferred. The Pinelands Plan provides receiving areas in its regional growth areas. While the use of development credits is an evolving technique, it has had frequent successes and has proven itself in the marketplace. The experience of the PDC will be a significant step in the evolution of this means of redistributing the benefits from planning. The Plan also recommends a Development Credit Bank to guarantee the value of credits for loan purposes.

Additionally, the Plan provides for the accomplishment of final subdivisions and owner occupied housing on land purchases prior to the institution of the Pinelands moratorium. Hardship provisions are also incorporated to protect certain property owners. All of these will tend to mitigate any negative impact upon the owners of regulated properties.

While it cannot be stated that some property owners will not suffer a depreciation in the value of their assets even after these factors are taken into consideration, a similar planning experience offers a valuable comparison. In the Adirondack Park Plan, even more restrictive land use policies are in effect than in some areas of the Pinelands. After several years of implementation of this plan, recent studies indicate that there is insufficient evidence of significant reduction in property values in the area due to the restrictive land use policies.

The true answer to the question of impact of the Pinelands Plan on local land values must await a similar period of years of implementation of the Plan. Continuous monitoring of land value, impacts and adjustments in the Plan to respond to potential adverse impacts are important components of future Commission activities.

#### Impact on Local Property Taxes

Since the Comprehensive Management Plan regulates the use of land within the Pinelands, it will affect changes in the tax base of certain municipalities. The impact on the private property tax base will be only on vacant land, however, as the Plan does not regulate developed land. Positive impacts are likely to occur on developed lands.

Communities containing large amounts of agriculturally assessed lands will not be significantly impacted, particularly where such lands are located in Agricultural Production Areas. Approximately 14 percent of the vacant land in the Pinelands is assessed as qualified farmland. The direct impact on the property tax base in the Pinelands will be in the category of vacant, non-agricultural private lands.

An analysis was undertaken to determine what might be the best case, medium case, and worst case impact on the property tax base of local governments, and the estimated property tax increase to restore lost revenues. Under the best case, no local governments would have

any depreciation in their tax bases. Thus, no tax increases would result from the implementation of land use districts provided in the Pinelands Plan. Under the medium or average case, a mixture of appreciation and depreciation in property value was hypothesized. Under the worst case, 30 percent depreciation and no appreciation was assumed for the vacant non-agricultural private lands which would be in restricted areas, a highly unlikely event yet one which clearly demonstrates the maximum negative impact which can be expected. Significantly, only three jurisdictions would experience a decline in their total tax base of 10 percent or more under this improbable assumption. Under the medium or average case, a mixture of appreciation and depreciation in property valuation is assumed. No local governments experienced a decline in total tax base of 10 percent under these assumptions, although the same three jurisdictions affected in the "worst case" passed a 5 percent threshold. The corresponding estimated total tax base reductions are:

	<u>Average Case</u>	<u>Worst Case</u>
Estell Manor City	-7.92%	-15.84%
Bass River Township	-5.30%	-10.75%
Woodland Township	-9.48%	-18.96%

If the negative property tax impacts are measured by a 10 percent depreciation in the vacant, non-agricultural private acreage tax base, within the Pinelands, only sixteen impacted jurisdictions would be adversely impacted. These are shown below with the corresponding estimated percentage reduction in their total property tax base.

	<u>Percent</u>
(Atlantic County)	
Corbin City	2.10
Egg Harbor City	.20
Estell Manor City	7.92
Folsom	1.16
Hammonton Twp.	.42
Mullica Twp.	3.27
Port Republic City	2.10
Weymouth Twp.	3.90
(Burlington County)	
Bass River Twp.	5.30
Shamong Twp.	1.92
Washington Twp.	1.84
Woodland Twp.	9.48
(Cape May County)	
Middle Twp.	1.29
(Cumberland County)	
Maurice River Twp.	3.04
(Ocean County)	
Barnegat Twp.	2.19
Lacey Twp.	2.78

In general, the property tax changes necessary to absorb the negative impacts are not major. Even if the three jurisdictions noted earlier were to increase their respective tax rates to affect the possible revenue losses, their post-plan tax levies would fall well below state averages. In conclusion, the fiscal impacts are not expected to be significant; it is likely that they will be manageable through reasonable implementation of the Pinelands Plan by each local government.

#### Impact on Local Government Public Costs

Under the Comprehensive Management Plan, local governments are required to develop and implement their own plans so that they are consistent with the Pinelands Plan. This activity will involve a public expenditure of funds in order to carry out the planning and financial management activities necessary to bring existing planning

and zoning in conformance with the Plan and to reassess the property tax base to reflect current market valuation. However, the actual additional cost to each government will vary according to the character of the affected communities, the resource capacity of the municipality and/or county, and the condition of its planning, zoning and tax information.

The existing planning staff and technical resources in each county, municipality and at the Pinelands Commission can be used to minimize the costs and duplication of these activities. Reliable estimates of the planning costs to the medium size Pinelands local government range from \$12,000 to \$20,000, for full development and adoption of a new master plan and zoning ordinances. Using an average cost of \$16,000, the total cost for fifty-two local government units can be estimated at \$832,000. Currently, \$23,000 in planning assistance monies have already been given to five counties and approximately \$300,000 remains available to distribute to the area's municipalities and counties. A current request for an additional \$300,000 is pending in the legislature. The formulae for the distribution of these funds may vary, but assuming a division into fifty-two equal parts would provide approximately \$11,538 to each community, an amount that would adequately cover the required one-third local government matching cost as provided under federal grants such as the Comprehensive Planning Assistance Program. The requirements for--and thus the cost of--undertaking much of this work for the Pinelands Plan should be additionally diminished because of similar updating and conformance requirements under the Municipal Land Use Act of 1976 which these activities will absorb.

Due to the modifications in permitted land uses, local governments may well need to reassess the properties within their jurisdiction. Even



without the Pinelands Plan, however, many of the districts' revaluations and reassessments are overdue by State Division of Taxation standards. Thus, as with planning costs, the costs associated with these activities should not be solely related to Plan implementation but rather to the short and long term costs common to local government operations and revenue operating activities. The reevaluation of a typical municipality will usually cost \$30 per improved property inspected, on a per parcel pricing basis, and less for the valuation of unimproved (vacant) properties. Assuming that half (twenty-six) of the Pinelands communities will require reevaluations in the near future at an average cost of \$35,000 per taxing district would render a \$910,000 total cost. For the other taxing districts within the Pinelands, it is anticipated that the costs of most annual reassessments associated with the Plan's implementation can be met with existing staff resources, or, if necessary, with minimal temporary or part-time additional resources.

The Draft Plan proposes a development configuration which will affect local costs. The most expensive form of urban development in terms of costs to local government is low density sprawl--the typical form of fringe suburban development. Redirecting this development into the Regional Growth Areas will save over 40 percent in public capital outlay costs. Thus, the use of Regional Growth Areas will tend to reduce the public source of capital cost of urban development.

## II. IMPACT ON THE ECONOMY

### A. The Regional Economy

#### Economy Activity within the Pinelands

The Pinelands Area forms part of seven counties in southern New Jersey. While the area represents a natural geographic region which can be defined on the basis of environmental linkages, it is by no means a unified economic region. The central portions of the Pinelands tend to be sparsely populated; employment and economic activity in these areas is quite limited and related generally, to agriculture and the natural resource base of the area. The outer sectors of the Pinelands, to the extent that they are developed, are predominantly residential in character. The economic orientation of these peripheral areas is outwards from the Pinelands towards such economic centers as Atlantic City, the Camden/Philadelphia metropolitan area and Toms River, respectively

An analysis of economic activity conducted as part of the background studies for the Comprehensive Management Plan documents the geographical distribution of economic activity within the Pinelands region. (Maps 1-4)<sup>1</sup> This analysis indicates the absence of major economic centers within the Pinelands as evidenced by the concentration of either major employers or significant retail activity. It further illustrates the extent to which residential development is clustered along the periphery of the Pinelands and has occurred in response to external development resources.

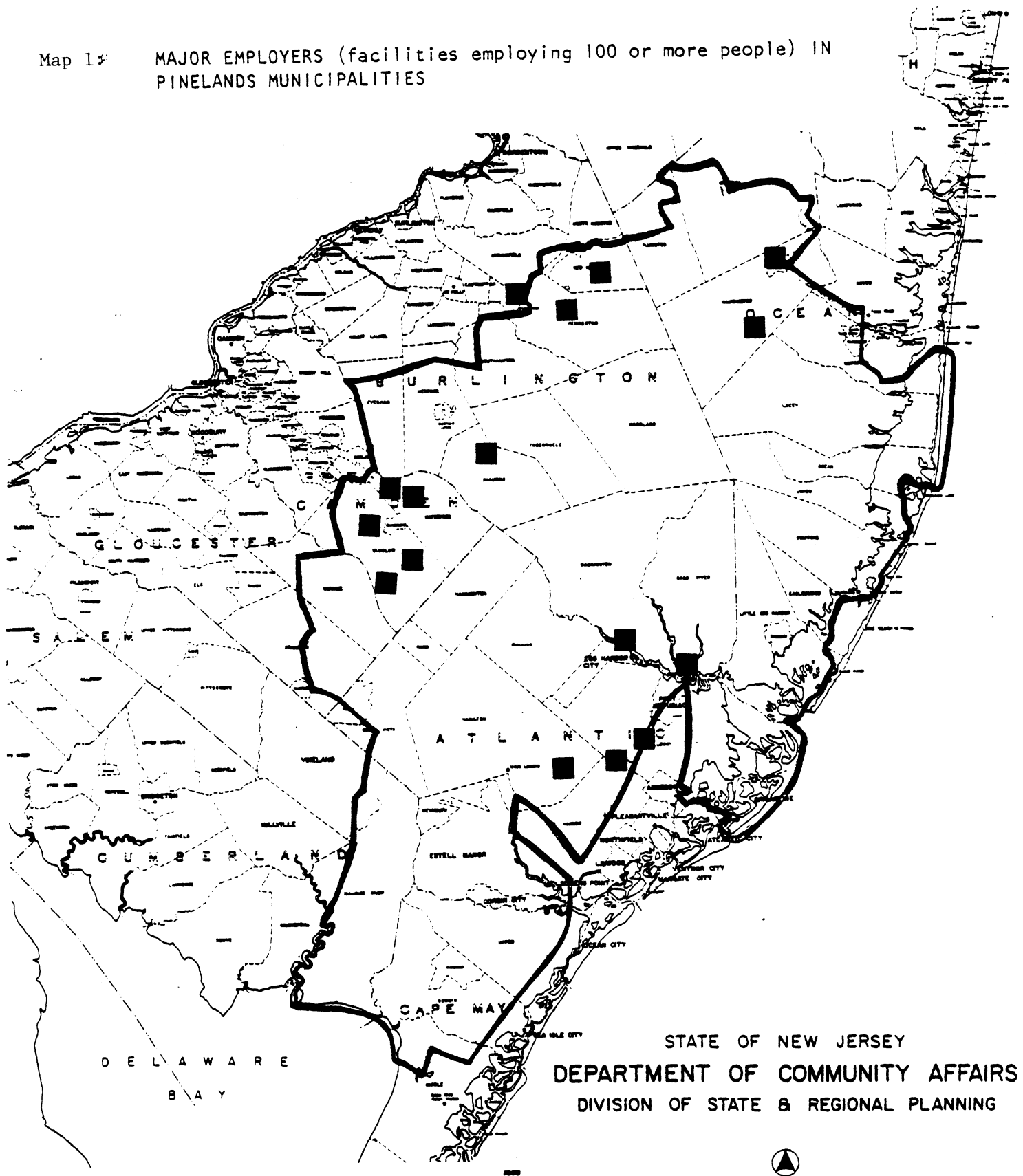
The seven county area which contains the Pinelands provides the general economic context for examining the regional economic impacts of the Comprehensive Management Plan. An overview of the employment and income structure of the seven

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1) Alan Mallach Associates, Growth Shapers, Background report prepared for the Pinelands Commission, February, 1980.

Map 1:

# MAJOR EMPLOYERS (facilities employing 100 or more people) IN PINELANDS MUNICIPALITIES



SOURCE: county industrial directories  
and informal contacts

ALAN MALLACH ASSOCIATES

Map 2 : MAJOR RETAIL CENTERS SERVING  
PINELANDS REGION



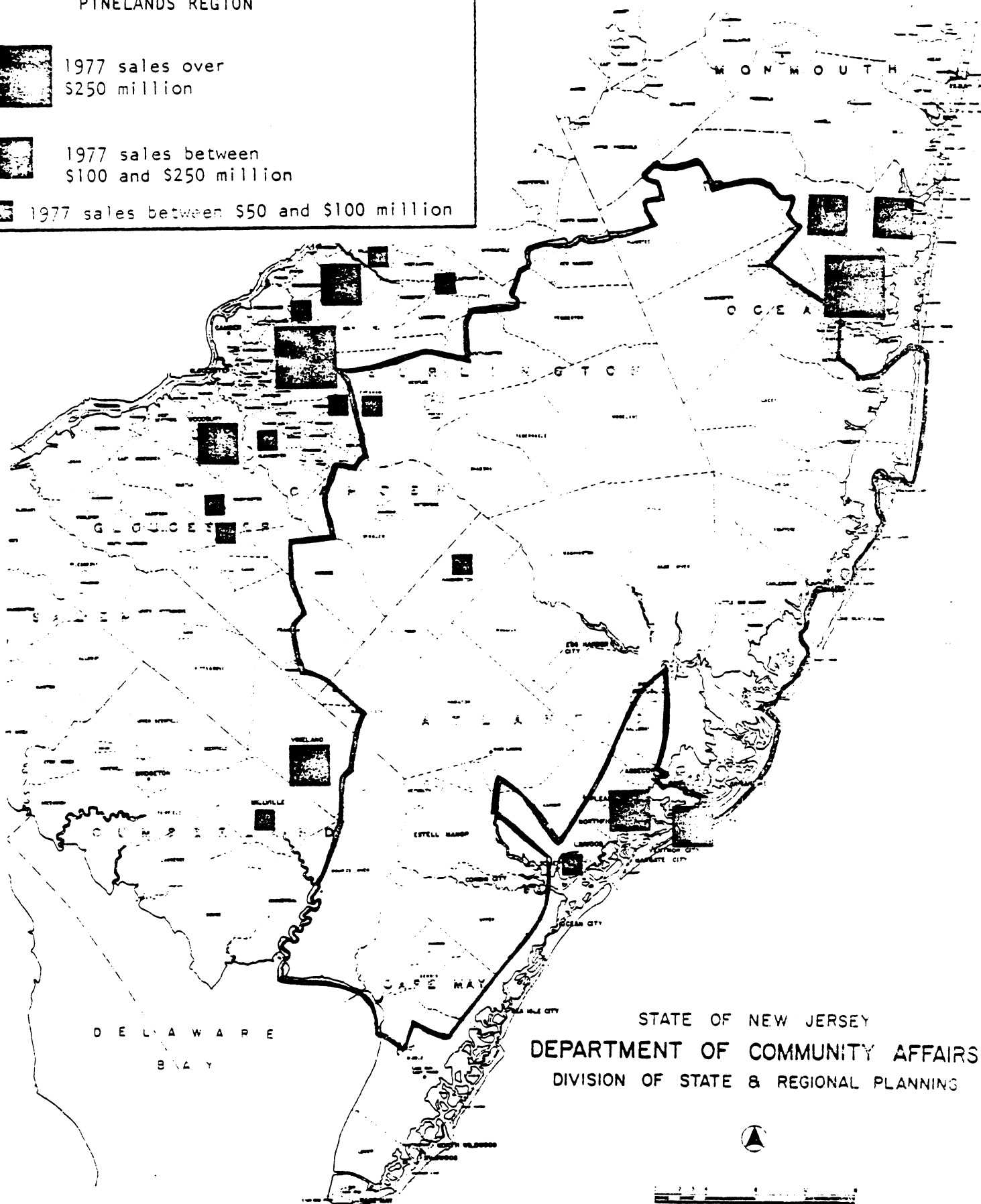
1977 sales over  
\$250 million



1977 sales between  
\$100 and \$250 million



1977 sales between \$50 and \$100 million



STATE OF NEW JERSEY  
DEPARTMENT OF COMMUNITY AFFAIRS  
DIVISION OF STATE & REGIONAL PLANNING

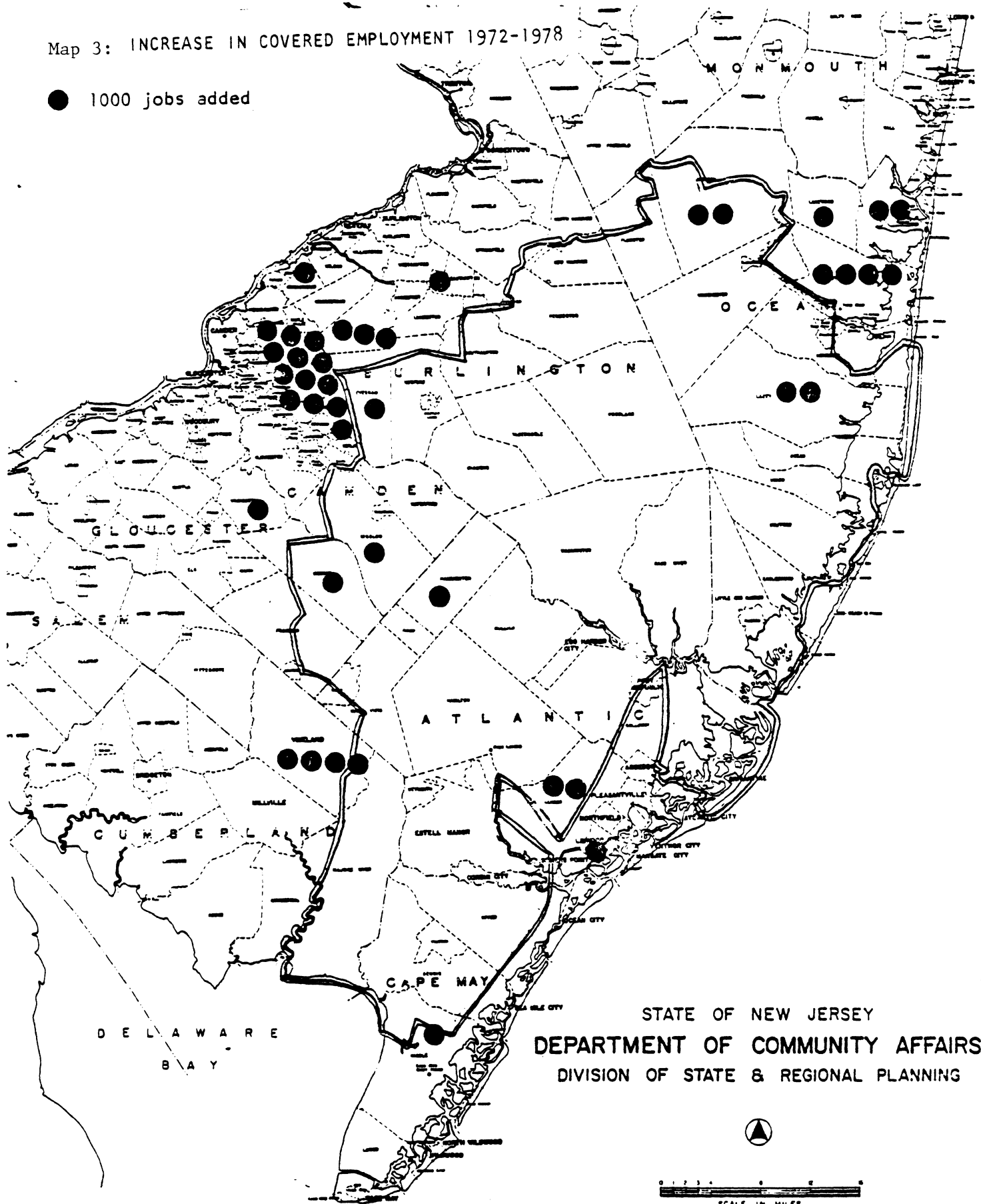


SCALE IN MILES

ALAN MALLACH ASSOCIATES  
SOURCE: Census of Retail Trade (1977)

Map 3: INCREASE IN COVERED EMPLOYMENT 1972-1978

● 1000 jobs added

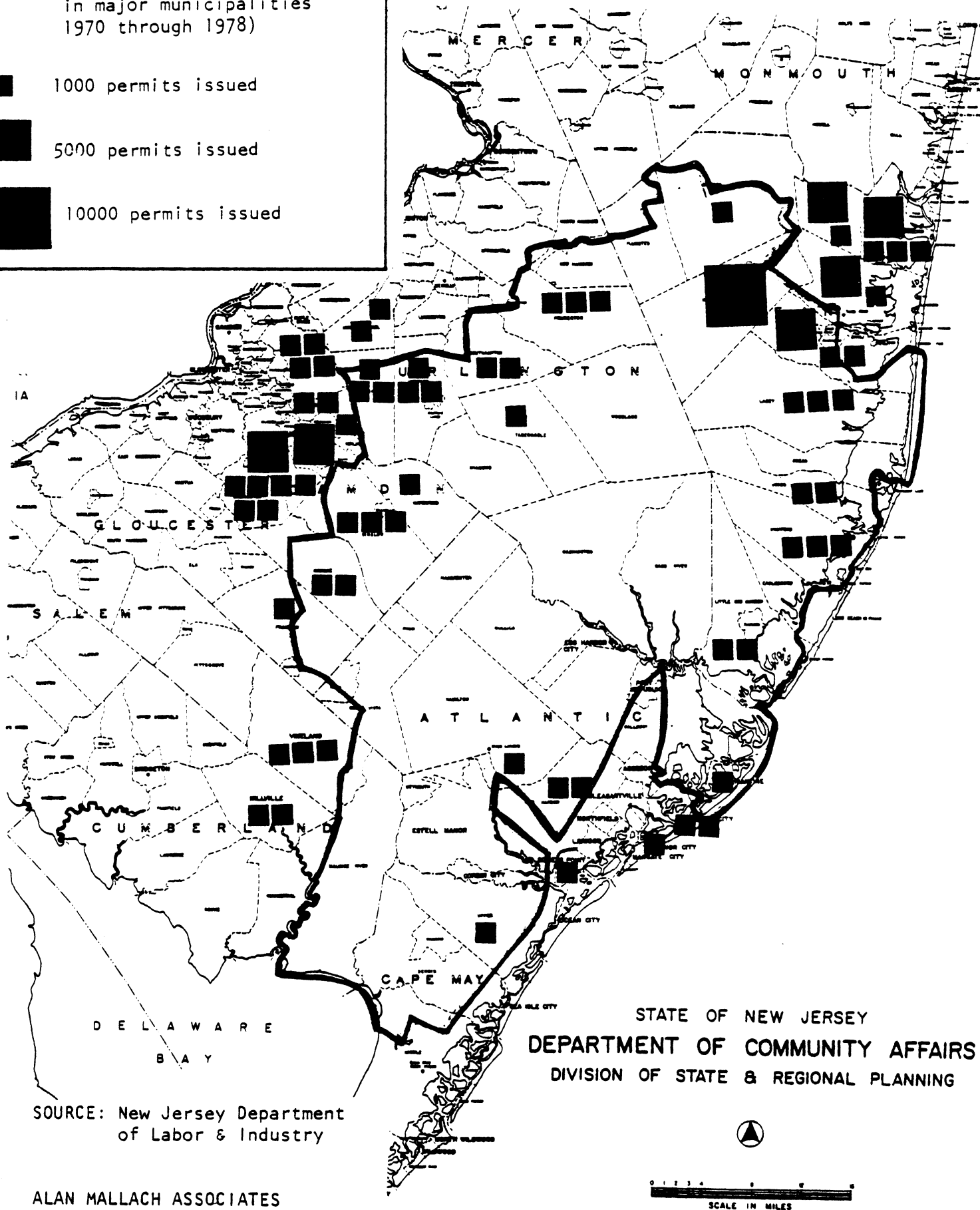
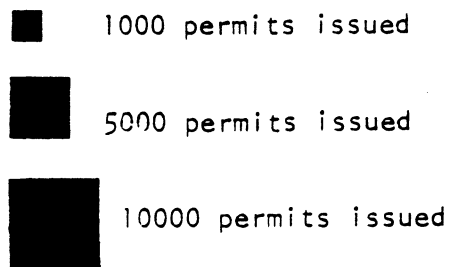


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0 1 2 3 4 5 6 7 8 9  
SCALE IN MILES

Map 4: RESIDENTIAL DEVELOPMENT  
(building permits issued  
in major municipalities  
1970 through 1978)



ALAN MALLACH ASSOCIATES

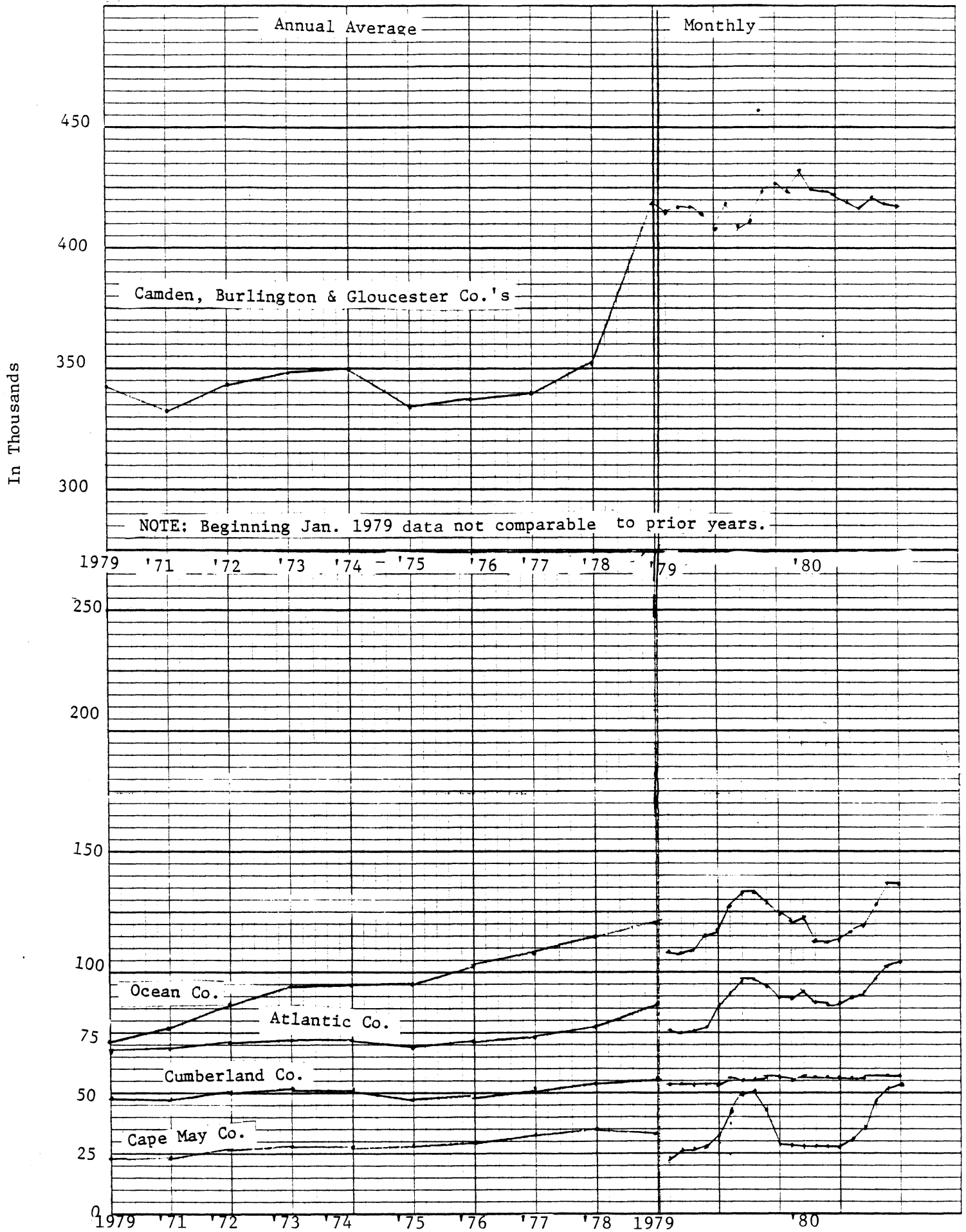
county area is presented in the following section followed by brief descriptions of major elements of the regional economy including tourism, agriculture, commerce and industry, construction and government.

#### Employment and Income in Seven County Pinelands Region

Total employment in the seven Pinelands counties amounted to an average of 715,100 during 1979; unemployment during the comparable period averaged 7.9 percent. Employment trend data by labor market area are summarized on the accompanying charts. The data serve to illustrate the varying rates of expansion of the respective areas as well as the extreme seasonal nature of employment in the coastal counties.

The composition of employment in Atlantic, Cape May and Ocean counties differs markedly from that in Burlington, Camden, Gloucester and Cumberland counties. In the former counties tourism is the basic industry and employment is concentrated in the retail and service sectors of the economy. The four Delaware River counties by contrast have substantial shares of manufacturing employment, ranging from a low of 26 percent of covered employment in Camden county to a high of 43 percent in Cumberland. The trade and service sectors are important employers in Burlington, Camden and Gloucester counties, but wholesaling and business services account for greater shares of jobs within these categories than in the more consumer oriented coastal counties. Table II-1 lists covered employment by industry group and county as of September, 1979.

Agriculture, while an important land use throughout the region, represents a relatively small share of total covered employment, ranging from less than 1 percent in Ocean county to a high of 5 percent in Cumberland County. Total covered employment in agriculture amounted to approximately 9500 jobs. Construction jobs as a share of total employment ranged between 5.5 percent and 6.5 percent in all counties except Cumberland where it accounted for only 4.1 percent and Ocean county where it represented over 8 percent. It should be noted that



SOURCE: N.J. Department of Labor and Industry



Table II-1

## COVERED EMPLOYMENT BY INDUSTRY GROUP AND COUNTY

	Atlantic	Burlington	Camden	CapeMay	Cumberland	Gloucester	Ocean	Total
Agri, For. & Mining	1,834	1,116	858	402	2,753	1,788	795	9,546
Construction	3,697	4,159	7,631	1,651	1,875	2,610	4,984	26,507
Manufacturing	8,619	20,695	35,982	1,523	19,571	14,893	6,029	107,312
Transportation	1,236	2,241	5,020	349	2,358	1,439	907	13,545
Comm. & Utilities	2,301	2,427	2,914	758	596	894	1,974	11,864
Wholesale Trade	2,636	4,755	11,265	445	1,683	2,408	1,615	24,807
Retail Trade	18,456	20,913	32,512	11,486	7,465	11,272	21,993	124,097
Finance	4,338	4,030	9,342	1,304	2,194	1,730	3,828	26,766
Services	18,252	15,808	30,610	7,676	6,693	7,135	17,645	103,819
TOTAL	61,369	76,144	136,134	25,594	45,183	44,169	59,770	448,363
Agri., For. & Mining	2.99%	1.47%	.63%	1.57%	6.09%	4.05%	1.32%	2.13%
Construction	6.02	5.46	5.61	6.45	4.15	5.91	8.34	5.93
Manufacturing	14.04	27.18	26.43	5.95	43.31	33.72	10.10	23.93
Transportation	2.01	2.94	3.69	1.36	5.21	3.26	1.52	3.02
Comm. & Utilities	3.75	3.19	2.14	2.96	1.32	2.02	3.30	2.65
Wholesale Trade	4.31	6.24	8.27	1.74	3.73	5.45	2.70	5.53
Retail Trade	30.08	27.47	23.88	44.88	16.52	25.51	36.80	27.68
Finance	7.06	5.29	6.86	5.10	4.86	3.92	6.40	5.97
Services	29.74	20.76	22.49	29.99	14.81	16.16	29.52	23.16
TOTAL	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: N.J. Department of Labor and Industry

both construction and agricultural employment tend to be underreported in covered employment statistics since the latter exclude the self-employed and most agricultural workers.

Personal income data provide another measure of the relative importance of different sectors within the regional economy. Data are presented both by place of work and place of residence to indicate the relative shares of income "imported" from or "exported" outside the seven county region. Total labor and proprietor income generated within the seven counties was equal to \$7,648.1 million in 1978. The principal source of income by industry, as shown in Table 3 was manufacturing with 22.4 percent, government with 20.5 percent and services with 18.2 percent.

Personal income by place of residence is derived by adjusting aggregate labor and proprietor income by place of work as follows: a) individual contributions for social insurance programs are subtracted; b) a residence adjustment is added to reflect the income of commuters to areas outside the county; c) estimates of dividend, interest, rental income, royalties and transfer payments are added to give total personal income. The derivation of aggregate personal income by place of residence for the seven Pinelands county area is shown below:

Table  
II-2 Derivation of Personal Income by Place of Residence

1.	Total labor and proprietor income by place of work	(\$ rounded in millions) \$7,648.1
2.	Less, contributions for social insurance	- 423.5
3.	= Net labor and proprietor income by place of work	7,224.6
4.	Plus, residence adjustment	+2,008.5
5.	= Net labor and proprietor income by place of residence	9,233.2
6.	Plus, dividends, interest, etc.	+1,562.2
7.	Plus, transfer payments	2,077.0
8.	Total personal income by place of residence	\$12,872.5

These data indicate a substantial contribution to personal income from areas outside the seven county area. The residence adjustment of \$2,008.5 million, reflecting commutation to jobs outside the area, amounted to 21.8 percent of labor and proprietor income by place of residence. Dividends, interest, transfer payments, etc. accounted for 28.3 percent of personal income; this relatively high share is attributable in part to the large retirement community in the area.

Table II-3

Labor and Proprietor Income by Place of Work (\$ in millions )

a) by type

Wage and salary disbursements	\$ 6,476.7	84.7%
other labor income	587.1	7.7%
proprietors income	584.3	7.6%
farm	25.8	3.4%
non farm	<u>558.6</u>	<u>7.3%</u>
Total	\$ 7,648.1	100.0%

b) by industry

agriculture, forestry, fisheries & related	\$ 101.7	1.3%
mining	16.4	.2%
construction	466.4	6.1%
manufacturing	1,715.6	22.4%
transportation	520.8	6.8%
wholesale	434.9	5.7%
retail	1,041.9	13.6%
finance, insurance and related	394.1	5.2%
service	1,390.0	18.2%
government	<u>1,566.2</u>	<u>20.5%</u>
Total	\$ 7,648.1	100.0%

NOTE: Detail may not add to total due to rounding.

SOURCE: U.S. Dept. of Commerce, Bureau of Economic Analysis as reported by N.J. Dept. of Labor and Industry.

## Travel and Tourism

Travel and tourism is one of New Jersey's major growth industries.

The economic benefits of tourism to the state as a whole are described in the Ten Year Master Plan of the Division of Travel and Tourism of the N.J. Department of Labor and Industry. The Division defines travel and tourism as an activity away from home for the purpose **of** personal or pleasure travel, including all overnight trips and day trips of any distance providing the trip is not of routine nature. As of 1976, New Jersey with 108,800 jobs ranked tenth nationally in travel and tourism related employment. These jobs were distributed by sector as follows: <sup>1</sup>

	(in thousands)
Public Transportation	7.4
Auto	5.0
Lodging	17.9
Food	60.8
Entertainment and Recreation	8.6
Incidental surcharge	6.5
Travel Arrangement	2.6

The Division of Travel and Tourism projects that during the 1980's tourism will become the top industry in the State, spurred by the legalization of casino gambling in Atlantic City, the growth of the Meadowlands Sports Complex, the expansion of Newark International Airport and the general increase in tourist and recreation attractions in the State. It projects that by 1990 there will be 500,000 people employed in tourism related jobs and that travel generated revenues could reach 15 to 20 billion dollars annually.

Data are not available in similar detail to estimate the share of tourism employment and revenues attributable to the seven county area which contains the Pinelands. The importance of tourism in this sector of the state however, is probably greater than in any other region, both as the mainstay of the local

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1. Based on data from the U.S. Travel Data Center in Washington, D.C.

economy and as a share of the state. The economies of Atlantic, Cape May and Ocean counties, in particular, are heavily dependent upon the tourist industry. As shown on the accompanying table, three categories of employment directly associated with recreation and tourism - eating and drinking places, lodging places and amusements - accounted for large shares of local covered employment: 25 percent in Atlantic County, 46 percent in Cape May county and 19 percent in Ocean County. By contrast, the same categories accounted for only 7.3% of total covered jobs statewide.

The Division of Travel and Tourism has divided the state into a series of regions for the purpose of describing the tourist attractions and potentials of the State.

- Atlantic City is identified as a region unto itself. As the new casino gambling and entertainment center of the East, it is providing a major impetus for a transformation of the state's tourist industry characterized by a greater portion of long distance and foreign travellers, year round vacationers and major convention activity.

- The Cape Region includes Cape May and Cumberland counties and Atlantic County outside Atlantic City. This area has been a principal destination for summer vacationers because of its fine beaches, outdoor recreation facilities and varied family attractions. Cape May county has pursued its own program to promote tourism and has successfully established a market for its resorts throughout the Northeast and in Canada. Facilities in the Cape region are limited almost entirely to the summer seasons.

- Ocean County is included along with Monmouth County in the Shore Region. While the coastal portion of the county is identified as the key tourist attraction, the inland forested areas are conducive to a wide variety of outdoor recreation activities. The Great Adventure amusement park in Jackson Township is a statewide tourist attraction.

- The Delaware River Region includes counties of Burlington, Camden and Gloucester as well as Salem and Mercer counties. The region has not been particularly associated with tourism but Cherry Hill, with its extensive lodging facilities, does offer limited scale convention facilities. The region also contains numerous historic sites and visitor attractions as well as a central portion of the Pinelands.

The unique natural environment of the Pinelands provides a vital element of the overall tourist environment of the seven county region. Outdoor recreation opportunities are the basic foundation upon which the area's tourist industry is built. Pinelands-related recreation activities enhance the attraction of

the South Jersey coast, expanding the range of choice of recreational pursuits as well as extending the season of recreation activity to include spring and summer months.

Table II-4

PERCENT OF COVERED EMPLOYMENT

SIC Category Code	State of N.J.	Atlan- tic	Burl- ington	Cam- den	Cape May	Cumber- land	Glouc- ester	Ocean
	%	%	%	%	%	%	%	%
58 Eating & Drinking Places	5.41	12.62	8.38	6.51	25.33	3.43	6.33	12.31
70 Hotels, etc.	.98	9.02	1.33	.96	16.21	.4	.42	1.55
79 Amusements, NEC *	.91	3.48	.88	.74	4.79	.23	.65	5.53
TOTAL PERCENT	7.30	25.12	10.59	8.21	46.33	4.06	7.4	19.39
TOTAL JOBS (IN 1,000's)	180.0	15.5	8.1	11.2	11.9	1.8	3.3	11.6
TOTAL COVERED JOBS (IN 1,000's)	2,464.4	61.4	76.1	136.1	25.6	45.2	44.2	59.8

Source: 1978 Covered Employment trends in New Jersey

\*NEC - Not elsewhere classified

### Agriculture

According to the U.S. Census of Agriculture, the seven Pinelands counties contained 2719 farms with a total acreage of 346,732 in 1978 representing about 1/3 of reported farm acreage in the State of New Jersey. The average size per farm was 127.5 acres. Harvested cropland accounted for a reported 205,332 acres or 59.2% of all farm acreage. It is estimated that about 58,000 acres of active agricultural land exists within the Pinelands Protection Area; this represents about 28 percent of active cropland in the seven counties.

According to the Census, the total amount of land in farms rose slightly between 1974 and 1978 from 340,145 to 346,732 acres; total cropland was also reported to have increased, from 226,347 acres to 235,293. The number of farms increased from 2559 to 2719, but the average size of farms decreased from 133

acres to 127.5 acres. The census data also revealed that there has been a slight decrease in the average age of farm operators; statewide the average age dropped from 53.8 years to 51.4 years. Further, the data indicate a greater proportion of farm operators working 100 days or more off the farm during the census year.

The seven Pinelands counties account for a substantial share of the State agricultural production; the respective share for various crops is shown below:

Table II-5

Pinelands Counties as Share of State (1979)

Corn production	21.1%
Soybean production	38.5
Wheat production	23.1
Barley production	42.9
Hay production	17.1
Potatoes production	45.1
Sweet potatoes production	91.6
Tomatoes-acres harvested	57.3
Asparagus production	56.3
Cabbage production	41.5
Lettuce production	85.2
Sweet corn production	66.3
Onions production	75.9
Peppers production	64.2
Apples production	64.7
Peach production	91.2
Blueberries production	94.5
Strawberries-acres	76.9
Cranberries	100.0
Cattle-head (1980)	16.9
Sheep-head (1980)	7.5
Hogs-head (1980)	73.3
Milk production	16.2
Chickens (layers)	33.9
Nurseries-acreage	32.3

In 1978 the total market value of agricultural products in the region amounted to approximately \$147 million. Labor and proprietor income from agriculture for the seven counties was reported at \$63.5 million for the same year. The importance of agriculture to the regional economy can be understated when viewed only in terms of the dollar income values directly associated with agriculture. Farm expenditures for machinery and equipment, livestock, feed, chemicals and fertilizer and services, etc. tend to be made locally; thus

farm dollars generate significant benefits to other sectors of the economy particularly retail and service establishments. Further, the food processing industry within the manufacturing sector is partially dependent on local agricultural production. Employment in the manufacture of food and kindred products accounted for a total of 10,000 jobs in the four Delaware River counties (Burlington, Camden, Gloucester and Cumberland), slightly more than 10 % of all manufacturing jobs.

#### Commerce and Industry

Manufacturing industries accounted for 107,312 jobs in 1979 representing 23.9 percent of total covered employment (about 15 percent of total employment), and generating 22.4 percent of aggregate personal income in the seven county area. Industrial jobs are concentrated in Camden, Burlington, Gloucester and Cumberland counties. While the area's industrial base is well diversified and fairly evenly divided between durable and nondurable goods industries, resource-related industries continue to play an especially important role. Food product manufacturing and stone, clay and glass manufacturing together accounted for 18,700 jobs in the four counties, equal to 20.7 percent of that area's manufacturing employment as of January 1980.

Resource extraction is the prime industrial use within the Pinelands Area itself. While the latter industry does not employ large numbers of persons directly, it supplies needed materials and resources for other sectors including both manufacturing and construction establishments. Forestry is another resource-related industry within the Pinelands. The region now yields relatively low quantities of commercial timber resources due to lack of forest management techniques. Production in 1977 was estimated as follows by the South Jersey Resource Conservation and Development Council:

Lumber, poles, piling	6,000,000 board feet
Pulpwood	27,000 cords
Fuelwood, firewood	45,000 cords



The Council judged that with proper forest management, the economic value of timber production for landowners could be increased from the 1977 existing level of \$504,000 to \$3,593,000.

#### Construction

In September 1979 there were 26,517 covered construction jobs reported for the seven county Pinelands area. A total of 4019 employers reported resulting in an average of 6.6 workers per employer establishment. The construction industry contributed \$466.4 million or 6.1 percent of labor and proprietor income in the seven county area. Traditionally, residential construction has been the predominant type of construction in the Pinelands region. Between 1974 and 1978, the number of residential building permits issued in the Pinelands Area has ranged from a low of 3,200 in 1975 to a high of about 5,200 in 1978 and averaged about 4,200. Permits issued within the Pinelands represented slightly under 1/3 of all permits issued in the seven Pinelands counties. Ocean county and Burlington county consistently accounted for by far the greatest share of the construction over this period. with 45 percent and 23 percent respectively of total permits issued in 1978.

The advent of casino gambling has given rise to a boom of hotel and other nonresidential construction in Atlantic city and has caused unprecedented demands for housing in the region with major implications for the construction industry. Available data indicate that from January 1979 to January 1980 covered employment in construction in Atlantic county increased from 3,400 to 5,800 and peaked at 7,500 in October 1979.

#### Government

Civilian government employment within the seven county region accounted for 109,650 jobs in 1979, or about 15 percent of total employment. The government sector, including both civilian and military payrolls, generated 24.2 percent, almost one fourth of all wage and salary income received in the

Pinelands counties.

Major federal government installations in the Pinelands include Fort Dix, McGuire Air Force Base, Lakehurst Naval Air Station, and the National Aviation Facilities Experimental Center. Employment at these facilities is estimated at approximately 21,000 jobs making the federal government the largest employer in the region.

State institutions within the Pinelands include Stockton State College, the New Lisbon and Woodbine State Schools, the Ancora Psychiatric Hospital and Leesburg State Prison. Burlington County Community College and Atlantic County Community College are also situated in the area. All of these facilities represent major employers in their respective subregions.

Based on data for all counties except Ocean and Cape May, it is estimated that about 72 percent of government employment is at the local or county government level. Of this, nearly one half is related to public education.

## B. Impact on the Regional Economy

As set forth in the previous section, the economy of the seven county region is dominated by manufacturing, government, services and trade, agriculture, and construction. Each of these are concentrated in different sections of the region. To the north, government in the form of military installations dominate. To the west, manufacturing, primarily outside the Pinelands, is significant, as is the increasing suburbanization which enters the Pinelands. To the east, services and trades, primarily tourism and retirement related, are concentrated. Agriculture is primarily found in the eastern portions of the Pinelands with the exception of berry agriculture found in the central core of the Pinelands and scattered throughout other sections.

### Manufacturing

As stated, manufacturing in the seven county region is mainly located outside of the Pinelands. However, the Pinelands areas in eastern Camden County are in the expansion path of the metropolitan area. Thus, the compatability of the plan with this form of growth is important. Light manufacturing and commercial uses are particularly important since they are the predominate uses to be anticipated within the Pinelands.

The Comprehensive Management Plan fosters a favorable climate for light industrial and commercial uses in all development areas. Regional growth and rural development areas, as well as towns and villages are suitable and natural locations for such uses. More restricted portions of the Pinelands are not as seen as economically

viable locations for industry and commerce due to their present distance from labor force concentrations and markets. It may be anticipated that the Plan will not negatively impact light industrial and commercial enterprises.

The expansion of heavy industry into the Pinelands would be impacted by the provisions of the Comprehensive Management Plan, except as it may be related to resource dependent industries. Heavy industry is not viewed as being compatible with the protection of the environmental qualities of the area.

The one heavy industry which might be expected to expand into the Pinelands is glass manufacturing. While this is a resource related industry, and is authorized, the environmental standards may limit its location in the Pinelands if other alternative sites are available. The extraction industries which mine sand and gravel in the Pinelands provide raw materials for glass industries and others. These will continue to flourish in most areas of the Pinelands and little, if any impact is anticipated under the Plan.

Most industrial activities of consequence which exist in the Pinelands will continue and expand under the provision of the Plan. These are primarily located in regional growth areas or other development areas, and include Lenox China, Mrs. Pauls, Matthey Bishop and Johnson Matthey, among others.

#### Government

Fort Dix, McGuire Air Force Base, the Naval Air Engineering Center at Lakehurst, and the Federal Aviation Administration Technical Center in Atlantic County constitute the major governmental facilities and employment centers in the Pinelands. The growth or decline of this

activity will not be determined by any provisions of the Comprehensive Management Plan. Indeed, the restrictions on growth in areas surrounding the military installations will enable them to continue their various missions in a safe and efficient manner.

Memoranda of agreement between the Commission and the federal facilities will provide for meaningful relationships to protect the environment while not inhibiting the necessary operations of the federal government. Thus, in maintaining the quality of the area and minimizing conflicts between urban areas and military activity, this valuable economic segment of the Pinelands may be expected to be enhanced.

#### Tourism, Recreation, and Retirement

The Pinelands truly represents a major regional recreational resource. Its unique qualities and expanses of open space attract the outdoor recreationist, whether hunter, camper, canoeist, biker, or fisherman. Of equal importance, of course, is the regeneration of the Atlantic City area due to the advent of casino gambling. This major new tourist magnet has many ramifications for increased use of the area's natural resources, as well.

The Pinelands Comprehensive Management Plan is totally consistent with, and will significantly enhance, the region's tourist economy. Low intensive and intensive recreation facilities are authorized and encouraged by the Plan. The acquisition of large amounts of acreage for public use and enjoyment will add to the reservoir of recreational opportunities. Additionally, the national recognition of the Pinelands as an important resource evidenced by the creation of the Pinelands

National Reserve will serve to expand the market for the tourist and commercial recreation industry.

Nothing in the Plan will inhibit the potential for continued viability of the gambling activities in Atlantic City. Development pressures emanating from this new economic activity will, it is believed, be accommodated in the designated development areas provided by the Plan. These include housing for employees, and support services and facilities.

The increased recreational use of the Pinelands which depends upon the preservation and protection of open space will benefit greatly by the positive impact of the Comprehensive Management Plan.

The retirement industry will also be enhanced by the Plan. The eastern and central area of the Pinelands offers retirees an exceptionally pleasant living environment without the necessity of conflicting urban stresses. If retirement services are to continue as an economic activity, and if existing retirees are to continue receiving such services, maintenance of the attributes of the region which originally attracted retirees must be maintained. The Plan accomplishes this objective.

The Plan, however, may impact the growth of retirement housing in more restricted portions of the Pinelands. As the Commission's growth studies have indicated, the competition for urban land uses due to casino development would inhibit such growth regardless of the present planning effort.

#### Construction

The construction industry, particularly as it relates to housing, should not be negatively impacted by the Comprehensive Management Plan.

Assuming that adequate land has been made available in the development

areas of the Pinelands to accommodate a large portion of the projected growth in the region; that "grandfathering" provisions for single family units and provisions for final subdivisions add to that accommodation, the industry should continue to thrive.

The Pinelands Plan does not stop growth in the region, it redirects growth to suitable locations in a manner consistent with the legislative mandate to "discourage scattered and piecemeal development."

The Plan, due to its environmental standards may add to the cost of construction in certain locations. It is believed, however, that such costs will not add greatly to housing prices. Such costs will be minimal in light of the alternative costs of restoring a destroyed environment.

Intelligent planning for better land use normally enhances the housing market. The quality of life associated with good development continues to compliment the market opportunities.

Opportunities for low, moderate, and middle income housing provided by the plan should enhance the balance of housing in the region. It is believed that the plan provides the opportunity for more such units to be built than would otherwise occur without it.

The Plan provides mechanisms for increasing growth areas should additional housing needs become apparent in the future. A continuing monitoring of development and land availability matched with the three year plan review and amendment process should be adequate to respond to the continuing needs of the construction industry.

#### Shellfisheries

The shellfishing industry in areas adjacent to the Pinelands depend upon the quality and quantity of ground and surface water

emanating from the Pinelands itself. While the industry employs less than 200 people, it generated values in excess of \$4 million dollars in 1978. The Pinelands also accounts for a good portion of the 25,000 recreational shellfish licenses issued in the same year.

Shellfish are extremely intolerant to contamination from toxics and bacterial viruses. The continued protection of ground and surface waters provided by the Comprehensive Management Plan is critical to sustaining this economic activity. Thus, the Plan should protect and enhance shellfish industries.

#### Agriculture

Agriculture is an historic and productive sector of the South Jersey economy and culture. Contrary to state and national trends, the amount of land in agriculture in southern New Jersey has been increasing. Additionally, the average age of farm operators has dropped, indicating new entrants into the industry. These trends are most encouraging, and the Pinelands plan proposes measures to further the objectives of agricultural preservation. Efforts to preserve agriculture must be evaluated in terms of what measures are possible and which will maintain a level of profitability for agricultural activities. The following discussion addresses these two concerns.

The Draft Comprehensive Management Plan does not impose any use restriction or impose any management practice which would tend to render agriculture less possible or less profitable than would be the present case. On the contrary, the plan will tend to enhance both the possibility and profitability of agriculture by providing for an agricultural production district which will control the "squeezing out" of agriculture and will tend to maintain farmland prices consistent with the ability of a farm operation to afford them.



Thus the plan, first, does not impose any restrictions on farm operations and, second, will directly and indirectly enhance farm operations.

#### The Agricultural Credit System in the United States

There are two major groups of functionaries in the farm credit system of the United States. The first is the Farm Credit System (FCS) which is governmental and quasi-governmental in nature. The second is the private system of credit made up primarily of commercial banks.

The Farm Credit System.<sup>1</sup> Public Law 92-181, the Farm Credit Act of 1971 (85 Statute 583, U.S. Code), consolidated the various public farm credit programs. There are three major branches of the FCS: (1) the Federal Land Banks and the Federal Land Bank Associations, (2) the Federal Intermediate Credit Banks and the Production Credit Associations, and (3) the Central Bank for Cooperatives. These organizations are supervised by the Farm Credit Administration (FCA). Each of these organizations will be discussed below.

1. Federal Land Banks. This system dates back to 1916. It is a cooperative system of 12 Federal Land Banks with local lending associations known as Federal Land Bank Associations. These banks do not have government budget allocations, thus they must recoup the costs by charges to their users. The FLB makes long term loans. Over 90% of the FLB loans are used for the purchase of real estate, improving

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<sup>1</sup> See Webb, Kerry, "The Farm Credit System", Federal Reserve Banks of Kansas City - Economic Review, June 1980, pp. 16-30.

land and buildings, or refinancing previous real estate or other short term loans.<sup>2</sup> All loans are secured by a first lien on real estate, and in no case can the loan exceed 85% of the appraised value of the property. Of course, the amount of the loan and the percentage of collateral value depend upon the typical standards of banking with primary emphasis being upon the ability of the borrower to repay the loan. The FLB loans carry a variable interest rate which is tied to the interest costs of FLB. In the second quarter of 1980 this rate was 10.50%. Generally, the FLB charges 1-2% less than commercial banks (in the second quarter of 1980 it stood at 5% difference but this was exceptional). Approximately 35% of all farm real estate credit comes from the FLB making it the largest supplier of farm real estate credit (commercial banks provide only 10%). Thus, the purpose of FLB is the acquisition of real farm property.

2. Federal Intermediate Credit Banks. This system dates from 1923. It was organized to discount the short and intermediate term notes of farmers from various financial institutions. The Production Credit Associations (PCA) make loans directly to farmers with monies made available from the FICB's. All loans must be repaid within seven years and the notes may carry variable interest rates. The criteria for loans by PCA's are similar to FLB's but there is flexibility to meet varying local needs. In the first quarter of 1980, PCA's were charging 12.1% as contrasted with 14.1% for commercial banks. PCA's provide 26% of non-real estate farm credit as contrasted with 44% by commercial banks.

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<sup>2</sup> "Characteristics of Federal Land Bank Loans," 1978, Statistical Bulletin 23, Farm Credit Administration, Washington, D.C., November, 1979, page 10.

3. Central Banks for Cooperatives. This system is charged with the responsibility of furnishing a dependable and continuing source of funds to agricultural cooperatives. Loans are made to meet any credit need such as operating expenses or acquiring facilities. Term loans are offered to finance long term acquisition and such loans are secured by the asset being acquired. The interest rates are variable. The BC may make unsecured seasonal loans which generally mature within 18 months. During 1979, BC's made \$19 billion in loans - up 36% from 1978.

The Private Sector. The private sector can and does make all forms of loans to farmers. Commercial banks provide only 10% of farm real estate credit and they do so at interest rates which significantly exceed those of the FCS. Since 1977, commercial banks have charged real estate interest rates which are 119% of the FLB. In the area of production credit, commercial banks provide 44% of non-real estate credit. This is substantially above the PCA's 26%. While commercial banks have charged interest rates which have averaged 110% of the PCA's, the ability to quickly and efficiently respond to the short term credit needs of farmers yields them the lion's share of the market. Typically, commercial banks will utilize similar criteria to the FCS in reviewing a loan application. The primary factor in approval of a loan is the ability of a borrower to repay the loan up to a certain percentage of the collateral. The FCS cannot exceed 85% of this value. Commercial banks can exceed this percentage but generally do not in light of sound financial practices. Within the private agricultural finance system, loans for acquisitions of equipment are similar to credit for the purchase of an automobile. Credit is extended to an individual based upon ability to repay and holding a lien on the item.

Other. The Farmers Home Administration (FmHA) makes loans available to farmers.<sup>1</sup> This agency is within the U.S. Department of Agriculture. The objective of FmHa is to provide financial and technical assistance to rural areas. A principal aim is to provide production loans to farmers. The apportioning of FmHA loans and grants is:

FmHa LOANS AND GRANTS

PERCENT OF TOTAL

1935-1979

	<u>TOTAL PERIOD</u>	<u>1979</u>
Farm Loans	45%	53%
Housing loans and grants	38%	29%
Community loans and grants	12%	10%
Business and industry loans	5%	8%
TOTAL	100%	100%

Within its farm loans, FmHA has a farm ownership loan program, a farm operating program, and a farm emergency loan program. These programs are directed at farm operators who are not able to attain the needed credit from other sources. In 1980, FmHA provided 8.1% of farm real estate credit.<sup>2</sup> FmHA also provides 12.8% of non-real estate credit to farmers.<sup>3</sup> FmHa has loan criteria similar to FCS except that the emergency loans normally have some form of subsidy (present interest rate is 5%).

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<sup>1</sup> See "A Brief History of FmHA", U.S. Department of Agriculture, Farmers Home Administration, Washington D.C., June 1980.

<sup>2</sup> Webb, op. cit. page 20.

<sup>3</sup> Webb, page 25.

## Availability of Credit

Either through public, quasi-public or private entities, all forms of agricultural credit is made available. With the exception of the various emergency loan programs of FmHA, all loans follow similar patterns. The public agencies tend to offer lower interest rates and thus have the greatest proportion of long term credit. In contrast, private entities have the greatest proportion of short and intermediate term credit.

While public agencies cannot exceed 85% of the appraised value of the real property in making an acquisition loan, it is unlikely that commercial banks would exceed this level. Thus, it may be argued that agricultural real estate credit cannot exceed 85% of the value of the property. The reason for this is obvious - it is imprudent to loan out more than could be recouped in the event of default. But, the 85% is a limit not a goal and the matter of the ability of the borrower to repay the loan is paramount.

In the area of production credit there is more flexibility. Chattel mortgages are acceptable and common. Crops, livestock, and equipment are commonly accepted for such purposes. Of course, real estate can be pledged for production credit but so could any other asset. While unsecured loans are possible, the higher interest rates which are charged due to the higher risk involved, tends to make this rather uncommon. The exception in granting unsecured loans is the larger concern which has established a long time relationship with a particular financial institution.

## Regulations and Agricultural Credit

Of relevance to the Pinelands Plan is the possible restriction or reduction in the availability of credit which the restrictions may create.

Such an event could occur in one of three ways, including 1) reduction in the appraised value of the real property; 2) reduction in the ability of the individual to repay a loan; and 3) unwillingness of agricultural lenders to loan on regulated properties for reasons other than (1) and (2).

(1) Reduction of appraised value. Generally, financial institutions look to the purposes of the loan when appraising a property. As an example, if the purpose of a loan is to acquire a farm, its value as a farm is given primary consideration. This is not to say that if the developmental or speculative value is removed from agricultural land, the appraised value of the land for agricultural credit purposes may be reduced. However, it must be kept in mind that the cost of acquiring a farm would be proportionately reduced and thus the need for agricultural credit. To the extent that the cost of acquiring farmland would be reduced, agriculture would be benefited. Thus, farm buyers would be able to borrow lesser amounts to acquire a particular farm property, but the price of that farm property would be less. Inasmuch as production credit is not exclusively related to the appraised value of the real property, production credit would be restricted only to the extent that chattel mortgages and/or unsecured loans are not available. However, the FCS and FmHA both make production credit available on chattel mortgages and even on an unsecured basis. Private institutions may or may not make production credit available as they see fit. It must be kept in mind that the majority of agricultural land in the United States has little or no developmental (speculative) value and there has been ample amount of production credit available from both public and private sources. Perhaps there is an issue of the use of

chattel mortgages - New Jersey institutions may have little or no experience with their use. If this is the case, experience will deal with this situation. The practice of FmHA at this time is to base all agricultural credit on the agricultural value of the land.

(2) Reduced ability to repay loans. Should farms located within the Pinelands and subject to these regulations incur lower earnings, the ability to repay loans and thus the amount of loans offered to them, will be reduced. Based upon the first circulated drafts of the Pinelands Plan, there was concern that the plan would impose standards which would, in effect, increase the costs of agricultural operation beyond those established by the appropriate regulatory authority. Revisions to the plan make clear the fact that neither the Pinelands Plan nor the Pinelands Commission are imposing any standards upon agricultural activity in and of itself. This clarification should abate the concern with respect to increasing agricultural operational costs.

(3) Unwillingness of Lenders. As a general principle, commercial banks will make loans to borrowers who offer both adequate security and a reasonable probability of repayment. Of course, many of these factors are subjective and it is entirely possible that a particular financial institution may well withdraw from loaning to farms for totally philosophic rather than business reasons. Given the competitive nature of the industry, and the non-discriminatory requirements of the FCS programs, an alternative supplier of credit will be forthcoming.

Out of concern that there would be no element of agriculture credit overlooked, several areas of the country which have established regulations of agricultural lands were surveyed. The objective was to

determine whether any problems of agricultural credit have occurred.

The areas surveyed were:

- State of Oregon
- State of New York
- State of Florida
- State of Virginia
- Suffolk County, New York
- Okeechobee County, Florida

In all of these areas, which place non-urban development restrictions on agricultural lands, research was undertaken to determine whether there had been any problem with agricultural credit. This survey indicated no extraordinary problems but confirmed that, first, non-urban development was considered (for those properties which had urban potential) in establishing appraised value and, second, that the agricultural value was of primary consideration irrespective of the urban value. Those commenting felt that agriculture would be benefited from such restrictions. Commercial bankers showed no reluctance in making loans to farmers in regulated areas.

#### Other Factors

Several agricultural experts noted that regulations of the type proposed in the Pinelands would tend to be viewed with great concern by existing agricultural operators. To a great extent, their land is their wealth - their life savings and their pension plan. Any action which would affect this situation will be viewed with alarm and concern. Additionally, certain existing operators may well have had to pay a price of land above the agricultural use value. These same operators could have entered into mortgages at values which exceed the agricultural values. While the agricultural industry and the nation will benefit from lower agricultural costs, these operators



see the matter differently. The Pinelands Commission proposes, in its draft plan, to provide Pinelands Development Credits (PDC's) as a means of dealing with the dislocations and the allocation problems which a plan such as this entails.

#### Agricultural Credit in New Jersey

In New Jersey, private, public and individual funding sources are utilized by agriculture. For farm real estate debt, individuals and the Federal Land Bank are the major sources - collectively accounting for 86% of all real estate debt. In the area of non-real estate debt,

#### AGRICULTURAL CREDIT

##### NEW JERSEY

(in thousands)

	<u>1978</u>	<u>1979</u>	<u>\$ Change</u>
Farm Real Estate Debt			
Total	238,136	245,837	+ 3.2%
Federal Land Banks	100,232	100,734	+ 0.5
Farmers Home Admin.	10,973	12,299	+ 12.1
All Banks	16,299	15,538	- 3.3
Life Insurance Companies	5,200	5,538	+ 6.5
Individuals and other	105,432	111,504	+ 5.8
Non- Real Estate Debt			
Production Credit Assoc.	44,480	41,927	- 5.7%
All operating banks	11,014	11,380	+ 3.3

SOURCES: U.S. Department of Agriculture, Agricultural Statistics - 1979  
U.S. Government Printing Office, 1979.

PCA's are the most significant sources. In 1978, the Census of Agriculture reported a total of 9,932 farms in New Jersey. A total of 2,130 of these were less than ten acres thus 7,802 farms were ten acres or larger. Assuming that there was no change in the number of farms between 1978 and 1979, the following averages result.

# DEBT PER FARM

## NEW JERSEY

	<u>1978</u>	<u>1979</u>
Total Debt - Real Estate	238,136,000	245,837,000
per farm - all farms	23,977	24,752
per farm - 10 acres or larger	30,522	31,509
Non-Real Estate Debt	55,494,000	53,307,000
per farm - all farms	5,597	5,367
per farm - 10 acres or larger	7,113	6,832
All Debt		
per farm - all farms	29,504	30,119
per farm - 10 acres or larger	37,634	38,341

SOURCE: (1) U.S. Department of Agriculture, Agricultural Statistics - 1979, U.S. Government Printing Office, 1979.

(2) Bureau of the Census, U.S. Department of Commerce, 1978 Census of Agriculture - Preliminary Report, New Jersey, AC 78 - P - 34 000, May 1980.

Based upon standard practice, the debt shown above cannot exceed 85% of the value of the land (except for emergency loans). The Census of Agriculture reports that the average value of the land and buildings as \$293,077 in 1978. This average value would yield a maximum loanable value of \$249,115 - with a more realistic \$234,462 at 80%. This figure far exceeds the \$38,341 average debt per farm. Of course, not all possible debts are included and the \$293,077 value may well reflect a certain amount of non-agricultural value. Nevertheless, these figures reflect that, on the average, New Jersey farm operators should have no problem in attaining credit based upon agricultural value of their farms.

While farm operators, on the average, appear to be in a position where they will not be restricted access to credit, equal consideration must be given to those operators who fall outside of this average.

Should a farm operator have approached FmHA for a farm loan, this agency would not have exceeded 80% of the agricultural value of the farm for a real estate loan. The FCS and commercial banks report that they are willing to loan beyond the agricultural value - based upon the highest and best use. A farm operator could find himself in a position where a real estate loan based, in part, upon development value may well have loans outstanding which would exceed the maximum loanable value based upon agricultural value alone. In such a situation, the loan would be called for lack of sufficient security. The FmHA reports that it can work with this operator and make credit available upon 100% of agricultural value due to the emergency nature of the individual operators situation. However, should the operator require credit beyond 100% of agriculture value, a problem would still exist.

Owners of regulated properties will be given PDC's. These credits could be utilized to provide the needed additional funds. The PDC's could be sold to raise revenues. However, the time when the operator would need the funds may not be coincidental with the ability to sell the PDC. Another alternative is for a PDC bank to purchase these rights on a priority basis for operators in this situation. Additionally, a PDC bank could loan, on a priority basis, to such operators with the PDC's being used as security for the loan. Another option worthy of consideration is for the state (the Pinelands Commission operating via a PDC bank) to guarantee loans to private institutions for such operators with the PDC used as credit.

Over 9,000 farms exist in New Jersey, occupying over 1 million acres of land or 21% of the area of the state of New Jersey. Nearly

8000 of these farms are over ten acres in size. While the vast majority of these farms will experience little or no difficulty in securing agricultural credit, it is a distinct possibility that a certain proportion of these operators will experience difficulty. However, it is not possible to project a number. In the event that operators do experience difficulties, FmHA will attempt to provide the needed loans to keep them operable. The use of a PDC bank to deal with these situations and others which do not obtain FmHA assistance will be discussed elsewhere. The point which must be stressed is that a range of alternatives exist or could be readily provided to address such issues.

### III. IMPACT ON LAND VALUES

The Comprehensive Management Plan establishes a system of land use regulations which restricts development alternatives in the undisturbed, environmentally sensitive parts of the Pinelands and seeks to direct growth into a more compact pattern within designated growth areas. While the land use patterns envisioned by the plan are expected to have a generally beneficial effect on the overall regional economy, they are expected to bring about some shifts, both positive and negative, in the relative values of properties in the area.

This chapter examines systematically the potential impacts of the plan on land values in the Pinelands. Estimates of market value are derived for various types of properties in the pre-plan and post-plan situations. It should be noted that the estimates are intended to reflect typical conditions for average properties and cannot be applied to specific properties or locations.

The plan seeks to maintain the traditional land uses that continue to predominate in the Preservation Area District and the Agricultural Production and Forest Areas. It is the restrictions on future conversion of land to more intensive use which have been of primary concern in the discussions of the Plan's impacts on property values. Accordingly, the potential negative impacts of the Plan are the specific focus of the following analysis. At the same time, the value-enhancing effects of the Plan are not to be overlooked. Improved lands throughout

the Pinelands and vacant lands in the Regional Growth and Rural Development Areas are expected to appreciate as a result of the plan's implementation.

The discussion of land value impacts is followed by a description of the Pinelands Development Credit program. The potential value for Pinelands Development Credits is analyzed in the context of their projected use in the growth areas. This analysis provides a basis for assessing the possible market value of credits in the future.

#### A. Analysis of Land Value Impacts

The objective of this analysis is to estimate the impact of the Comprehensive Management Plan on the value of vacant land and farmland in both the pre-plan period and the post-plan period.

Study of the Fair Market Value in the Pre-Zone Change of Land in the Pinelands

Step 1 in this study was the reanalysis of the sales data derived from the study of ten sample towns which was conducted as part of the background studies for the Comprehensive Management Plan.<sup>1</sup> This reanalysis included a breakdown of lands into four classifications as follows:

1. Average indicated fair market land values for land suitable for development by its physical characteristics within immediate proximity to growth areas of each of the 10 communities; these sales having been in areas of strong development pressure. See Table III-1

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<sup>1</sup> Gloria L. Christian, Pinelands Study Acquisition Cost Analysis, July, 1980.

2. Average indicated fair market land values for land suitable for development in average proximity to growth areas within each community and having moderate development pressure.  
See Table III-2.
3. Average indicated fair market land values for land suitable for development, but in remote proximity to growth areas having low development pressure. See Table III-3.
4. Average indicated fair market land values for land not suitable for development due to its physical characteristic. Land primarily wetlands and wastelands, which have no development pressure. These also, due to their physical problems, would have a highest and best use as passive recreation. See Table III-4.

In the consideration of the sales in Table III-1 and III-2, the land considered has an indicated highest and best use as residential development. The land considered in Table III-3 has an indicated highest and best use as interim agricultural and potential residential development. The land considered in Table IV has an indicated highest and best use as passive recreation.

The tables contain a brief synopsis of typical sales which have occurred and fall into the four categories to derive first a range of values in each category and then an average value in each category predicated on a per acre basis.

Step 2 of the study was to reach conclusions relating to average values ranging from lands having strong development pressure to those having no development pressure.

TABLE III-1 - FAIR MARKET VALUE - PRE-ZONE CHANGE

Immediate Proximity to Growth Areas - Strong Development Pressures

<u>Sale #</u>	<u>Township</u>	<u>County</u>	<u>Consideration</u>	<u>Acreage</u>	<u>Indicated Value P/A</u>
ST-39	Stafford	Ocean	\$150,750.	85.23±	\$1,769.
H-92	Hamilton	Atlantic	440,601.	89.16±	4,942.
T-40	Tabernacle	Burlington	213,750.	50±	4,275.
T-43	Tabernacle	Burlington	210,000.	59.7±	3,518.
T-62	Tabernacle	Burlington	217,938.	94.96±	2,295.
S-34	Shamong	Burlington	200,000.	61.5±	3,252.
S-36	Shamong	Burlington	308,000.	40±	7,700.
S-51	Shamong	Burlington	278,100.	124.44±	2,238.
S-53	Shamong	Burlington	<u>140,000.</u>	<u>51.17±</u>	2,736.
Totals			\$2,159,139.	656±	

\$2,159,139 ÷ 656 Acres = \$3,291 P/A Average

Say----- \$3,300.

Taking into consideration a time factor on the sales as they included sales from 1977 to 1979, a fair upward adjustment of the average would indicate an average value of \$3,600 per acre.

DISCUSSION

The sampling of sales as used taken from the 10 study towns was predicated not necessarily on regional growth and development pressures, but on growth and development pressures within each of the communities since the sales studied were located in proximity to already developing areas. The averages derived did not take into consideration anything but time and location and it is pertinent to point out the many variables which effect value when considering specific parcels of land which are: permitted density under the existing zoning ordinances; size of tract; shape; topography and frontage; and, of course, most pertinent would be the highest and best use of each parcel. In this average study, the highest and best use of the sales in Table I was considered to be as residential development.



TABLE III-2 - FAIR MARKET VALUE - PRE-ZONE CHANGE

Average Proximity to Growth Areas - Moderate Development Pressures

<u>Sale #</u>	<u>Township</u>	<u>County</u>	<u>Consideration</u>	<u>Acreage</u>	<u>Indicated Value P/A</u>
ST-56	Stafford	Ocean	\$635,000.	740.47±	\$ 857.
WO-119	Woodland	Burlington	285,000.	284.36±	1,002.
WO-128	Woodland	Burlington	150,000.	121.6±	1,234.
T-66	Tabernacle	Burlington	180,000.	79.98±	2,250.
S-43	Shamong	Burlington	148,500.	135.71±	1,094.
W-16	Washington	Burlington	40,000.	45.92±	870.
M-56	Mullica	Atlantic	94,000.	55±	1,709.
M-61	Mullica	Atlantic	<u>50,000.</u>	<u>80±</u>	625.
Totals			\$1,582,500.	1,543±	

\$1,582,500 ÷ 1,543± Acres = \$1,025 P/A Average                      Say----- \$1,000.

Taking into consideration a time factor on the sales as they included sales from 1976 to 1979, a fair upward adjustment of the average would indicate an average value of \$1,200 per acre.

DISCUSSION

The sampling of sales as used taken from the 10 study towns was predicated not necessarily on regional growth and development pressures, but on growth and development pressures within each of the communities since the sales studied were located in proximity to areas having average growth and moderate development pressures. The averages derived did not take into consideration anything but time and location and it is pertinent to point out the many variables which effect value when considering specific parcels of land which are: permitted density under the existing zoning ordinances; size of tract; shape; topography and frontage; and, of course, most pertinent would be the highest and best use of each parcel. In this average study, the highest and best use of the sales in Table II was considered to be as residential development.

TABLE III-3 - FAIR MARKET VALUE - PRE-ZONE CHANGE

Remote Proximity to Growth Areas - Low Development Pressures

<u>Sale #</u>	<u>Township</u>	<u>County</u>	<u>Consideration</u>	<u>Acreage</u>	<u>Indicated Value P/A</u>
WO-102	Woodland	Burlington	\$160,000.	225±	\$ 711.
WO-126	Woodland	Burlington	30,000.	32.16±	933.
M-17	Mullica	Atlantic	39,500.	79±	500.
L-79	Manchester	Ocean	1,640,998.	2,970±	552.
T-69	Tabernacle	Burlington	<u>72,075.</u>	<u>155±</u>	465.
Totals			\$1,942,573.	3,461±	

\$1,942,573 ÷ 3,461 Acres = \$561 P/A Average

Say----- \$550.

Taking into consideration a time factor on the sales as they included sales from 1977 to 1979, a fair upward adjustment of the average would indicate an average value of \$600.

DISCUSSION

The sampling of sales as used taken from the 10 study towns was predicated not necessarily on regional growth and development pressures, but on growth and development pressures within each of the communities since the sales studied were located in remote proximity to growth areas having low development pressures. The averages derived did not take into consideration anything but time and location and it is pertinent to point out the many variables which effect value when considering specific parcels of land which are: permitted density under the existing zoning ordinances; size of tract; shape; topography; frontage and, of course, most pertinent would be the highest and best use of each parcel. In this average study, the highest and best use of the sales in Table III was considered to be interim agricultural and potential residential development.

TABLE III-4 - FAIR MARKET VALUE - PRE-ZONE CHANGE

Wetlands and Land Not Suitable for Development - No Development Pressures

<u>Sale #</u>	<u>Township</u>	<u>County</u>	<u>Consideration</u>	<u>Acreage</u>	<u>Indicated Value P/A</u>
H-16	Hamilton	Atlantic	\$ 15,000.	80±	\$187.50
H-17	Hamilton	Atlantic	6,000.	20±	300.
H-90	Hamilton	Atlantic	13,860.	47.22±	294.
W-2	Washington	Burlington	40,000.	264.18±	151.
W-4	Washington	Burlington	7,500.	28.08±	267.
W-5	Washington	Burlington	2,500.	23.87±	104.
W-9	Washington	Burlington	65,000.	266.85±	243.
W-14	Washington	Burlington	9,500.	35±	251.
U-36	Upper	Cape May	<u>75,761.</u>	<u>81.55±</u>	329.
U-88	Upper	Cape May	<u>28,000.</u>	<u>30±</u>	333.
Totals			\$263,121.	877±	

\$263,121 ÷ 877 Acres = \$300 P/A Average

No time factor was considered for these sales although they included sales from 1977 to 1979 since there does not appear from a study of the sales any market increment for time.

DISCUSSION

The sampling of sales as used taken from the 10 study towns was predicated on the physical characteristics only and the averages derived considered no other variables. In this average study, the highest and best use was considered to be passive recreation.

Step 2

Table I: Strong Development Pressure

Analysis of these sales reveals a value range of from \$1,769 per acre to \$7,700 per acre with an average value of \$3,600 per acre.

Table II: Moderate Development Pressure

Analysis of these sales reveal a value range of from \$560 per acre to \$2,250 per acre with an average value of \$1,200 per acre.

Table III: Low Development Pressure

Analysis of these sales reveals a value range of rom \$465 per acre to \$993 per acre with an average value of \$600 per acre.

Table IV: No Development Pressure

Analysis of these sales reveals a value range of from \$104 per acre to \$333 per acre with an average value of \$300 per acre.

The average of the four categories is from \$300 per acre to \$3,600 per acre, which takes into consideration the variable development pressures within the study area. The application of these averages cannot be applied to any specific parcel of land due to the individual parcel variations and the variables that should be considered in a full appraisal of each and every parcel. They can, however, be applied on a general basis as a value range to show the overall pre-plan value of different segments of the Pinelands.

In deriving estimates of value for the Pinelands' Preservation and Protection Areas, it is felt that one of the most pertinent factors to be considered is the many variables in land values throughout this area. The application of the approach previously set forth takes

into consideration in the pre-zone change situation that there is a range of values from strong development pressure areas down to areas having no development pressure. This appears to be more reasonable when considering the overall impact on the Pinelands when one considers that the market would absorb land over an extended period of time, and that all vacant land could not be absorbed at once. The typical developer will develop land first in areas where there is shown to be market demand.

#### Conclusion

It is evident from this study that land within the Pinelands has a wide range of values in its present state. The range indicated by this study on an average basis in the pre-zone change period predicated on its present highest and best uses is from \$300 per acre to \$3,000 per acre.

This pre-zone change analysis, up to this point in this study, has not considered the many parcels of land having a potential highest and best use or present highest and best use as agricultural land. Therefore, consideration has been given to the agricultural land sales in New Jersey as prepared by the Rural Advisory Council of the New Jersey Department of Agriculture.

Analysis of Agricultural Land Transferred for Continuing Agricultural Use  
Table III - 5 represents the average price per acre of agricultural land transferred and continued in agricultural use. It is derived from Agricultural Land Sales in New Jersey, Third Report, Dated March, 1980 prepared by the Rural Advisory Council of the New Jersey Department of Agriculture.

TABLE III- 5 AGRICULTURAL LAND TRANSFERRED AND CONTINUING IN AGRICULTURAL USE

<u>COUNTY</u>	<u>NUMBER OF SALES</u>	<u>ACRES</u>	<u>AVG. PRICE PER ACRE</u>
Atlantic	7	194.4	\$2,395.
Burlington	35	805.6	2,797.
Camden	1	10.0	3,800.
Cape May	6	112.5	2,359.
Cumberland	31	1,494.4	1,272.
Gloucester	30	749.3	2,151.
Ocean	4	30.9	3,883.

#### Comments

The indicated value range as reflected by this analysis is from \$1,272 per acre to \$4,800 per acre, and takes into consideration that the two upper average price per acre figures of \$3,883 and \$4,800 represented very small acreage parcels and are indicative of purchasers whose primary occupation is not farming, since this would not be economically feasible. The other sales which are more closely related as to actual farm acreage, would indicate a range of from \$1,272 per acre to \$2,797 per acre. This would be more in keeping with the state average of \$2,150 per acre.

Consideration in analyzing the impact on the Pinelands must therefore be given to these land transfers which were acquired for continued agricultural use. This would further indicate in the pre-zone change period another variable to be considered. This agricultural value indication falls between the average values of Table III - 1 and 2.

The preceeding analysis is predicated on the pre-zone change prior to the implementation of the Draft Comprehensive Management Plan and considers vacant land predicated on its highest and best use with all

development rights intact, as presently existing under the limitations of the existing zoning ordinances in each municipality.

2. Study of the Fair Market Value in the Post Zone Change of Land in the  
Pinelands

In the post zone change period, it is assumed that implementation of the Comprehensive Management Plan will place restrictions on the density permitted and the uses of land in the Pinelands.

The Pinelands districts are the Preservation Area District, the Forest Area, the Agricultural Production Area, Rural Development Area, Pinelands Villages and Towns and the Regional Growth Area.

Due to the varied densities permitted under the Management Plan in the different areas, only a generalized approach can be considered and would be applicable to the reduction in both the Preservation and Protection Area of density of land use. Loss in development potential can be considered as a total loss or a partial loss of development rights.

This portion of the study considers land values in the post zone change period for land having a highest and best use as agricultural, assuming a total loss of all development rights. It further considers vacant land not suitable for agricultural purposes having a highest and best use as passive recreation.

In Step 1 of this analysis, the value of development rights on farmland is considered based on the highest and best use being purely for agricultural purposes. The method used to estimate the value of farmland for purely agricultural purposes takes into consideration localized data for locally grown crops and the income derived from each sample study. This net income to unimproved land is then capitalized

into an estimate of value via the income approach. This analysis of yields and unit prices of specific crops used as samplings were derived by study of the New Jersey Crop Reporting Service for the area in order to estimate a total income per acre. From this total income estimate, expenses and return to land and equipment were subtracted to realize a net income to the unimproved land. In estimating the capitalization rate, there appears to be no single correct answer as to what the rate should be. There has been extensive debate on this issue. It is reasonable to assume and adopt a capitalization rate at least as great as the long term borrowing rate facing the land owner.

In view of the recent fluctuation in interest rates and the uncertainty in the financial market in recent years, a capitalization rate of 12% has been selected. As a further step, the capitalization rates of 10% and 8% have been considered. These are presently used by the State of New Jersey and other agencies. The effects of these differences in rates are noted in each of the samples.

The net income as derived is the difference between gross income and operating expenses which incorporate an allowance for the value of the farmer's own labor and his management responsibilities and also, for interest costs on non-land assets, such as machinery, equipment and structures. The rate applied to interest costs on non-land assets, such as machinery, equipment and structures appears reasonable and applicable to a large amount of outstanding debts, although current rates are higher. The rate used appears to be fair due to the fluctuations in the last year of interest rates.

In order to derive an agricultural value of farmland, the four analyses following, based on the capitalized income approach, cover the most typical crops. These crops are of major importance in the Pinelands and include grain, mixed vegetables, blueberries and ~~cranberries~~.



## Grain Farm

Premise: Average Quality Farm

Crops: Grain Corn (50%) Soybeans (50%)

Land Quality: Capability Class II & III (With Supplemental Irrigation)

### Per Acre

#### Estimated Income

Corn 90 Bu./Ac. \$3,00/Bu. x 50%	\$135.	(1979)
Soybeans 30 Bu./Ac. \$6.20/Bu. x 50%	<u>93.</u>	
Total Income Per Acre		\$228.

#### Estimated Expenses

Materials	\$ 52.	
Labor	23.	
Machinery & Equipment	51.	
Irrigation	12.	
Interest on Operating Capital	6.	
Management	10.	
Miscellaneous	<u>1.</u>	
Total Operating Expenses Per Acre		<u>155.</u>
Operating Income Per Acre Before Capital Expense		\$ 73.
Equipment Investment Return \$100./Ac.		
Investment Amortization 10 years		
10% Return		20.
Building and Land Improvement Investment		
Return \$50./Ac with 20 years Amortization		
and 10 Return		<u>9.</u>
Net Return to Unimproved land Per Acre		\$ 44.
Capitalized Value of Land $\frac{\$44.00}{.12} = \$367./Acre$		
Capitalized Value of Land $\frac{\$44.00}{.10} = \$440./Acre$		
Capitalized Value of Land $\frac{\$44.00}{.08} = \$550./Acre$		

## Vegetables

Premise: Average Quality Farm

Crop Sweet Corn (75%) and Mixed Vegetables (25%)  
Land Quality Capability Class II & III Supplemental Irrigation.  
Average Management.

Sweet Corn is used as a general guide because it is the major vegetable crop grown in the area.

### Estimated Income

(1979 Price & Yield)

Corn yield per acre	70cwt/ac	
\$10.30/cwt x 75%		\$540.75
Other Vegetable Crops 25%		<u>484.75</u>
Total Income (Say)		\$1,151.

### Estimated Expenses

Materials	\$428.
Labor	156.
Machinery & Equipment	301.
Irrigation	20.
Interest on Operating Capital	
10% 4 Mo.	30.
Management 7% of Cost	65.
Miscellaneous	<u>8.</u>

Total Operating Expense Per Acre 1,008.

Return Per Acre Before Capital Expense \$ 143.

Equipment Investment Return, \$200. Per Acre  
Amortized 10 yrs. 10% Return 32.

Building and Land Improvement \$100. Per Acre  
with 20 years amortization 8% return 12.

Capitalized Value of Land  $\frac{\$99.00}{.12} = \$825$  Per Acre

Capitalized Value of Land  $\frac{\$99.00}{.10} = \$990$  per acre

Capitalized Value of Land  $\frac{\$99.00}{.08} = \$1,237.50$  Per Acre

Blueberries

Premise: Average Quality

Land Quality: Level, good water, 14" to 18" below surface or irrigation available; soil well drained; sand and muck.

<u>Estimated Income</u>	(Average) 1979 Price
Yield	260 trays
Unit Price	<u>\$5.90/tray</u>
Total Income Per Acre	\$1,534.

<u>Estimated Expenses</u>	
Materials	\$ 54.
Labor	746.
Machinery & Equipment	230.
Irrigation	26.
Miscellaneous	8.
Interest on 8% 6 Months working Capital	50.
Return on Management 7%	<u>80.</u>
Total Operating Expenses	<u>1,194.</u>
Return to Land Before Capital Expense and Equipment Investment	\$ 340.
Land Improvement Investment Including Plants 20 yrs. Amortization	200.
Equipment Return, \$350. 10 yrs. Amortization 10% Interest	<u>60.</u>
Net Return to Unimproved Land	\$ 80.

Capitalized Value of Land  $\frac{\$80.00}{.12} = \$666.66/\text{Acre}$   
(Say \$667 P/A)

Capitalized Value of Land  $\frac{\$80.00}{.10} = \$800./\text{Acre}$

Capitalized Value of Land  $\frac{\$80.00}{.08} = \$1,000./\text{Acre}$

## Cranberries

Premise: Average quality bogs, level, excellent water supply at elevation that bogs can be flooded to a uniform depth, good dykes and ditches, bogs of size and shape that equipment can be used. Bogs free of weeds. Bogs requiring support land held in private ownership as part of farm.

### Estimated Income

Yield	74 Barrels	
Unit Price	\$25.80/Barrel	(Based on 5 year average, 1979 Price)

Total Income Per Acre \$1,909.

### Estimated Expense

Materials, applied	)	
Labor	)	
Machinery & Equipment	)	
Interest on Working Capital)		Estimated Expense
12% 9 Months	)	\$13 P/B
Return on Management 7%	)	

Total Operating Expense 962.

Return on Land before Capital Expense  
and Equipment Investment 947.

Land Improvement Investment Including  
Plants, Ditches, Dykes, Water Supply  
and Leveling of Bogs, 20 yr. Amorti-  
zation 10% Interest 460.

Equipment Return \$500. 10 year Amorti-  
zation 10% Interest 80.

Net to Unimproved Land \$ 407.

Capitalized Value of Land in Bogs  $\frac{\$407.}{.12} = \$3,391./AC$

Capitalized Value of Land in Bogs  $\frac{\$407.}{.10} = \$4,070./AC.$

Capitalized Value of Land in Bogs  $\frac{\$407.}{.08} = \$5,087.50/AC.$

### Premise 1:

It is calculated that for every acre in bog, it requires 5 acres for a protected watershed, water storage and other support.

Value of Bog  $\frac{\$3,391.}{6 AC.} = \$565 P/A$  Value of Land

Value of Bog  $\frac{\$4,070.}{6 AC.} = \$678 P/A$  Value of Land

Value of Bog  $\frac{\$5,087.50}{6 AC.} = \$848 P/A$  value of Land

Premise 2:

It is calculated that for each acre of bog, one acre of water storage is required and 10 acres of support land and water shed.

Value of Bog and water storage area	\$3,391	\$4,070	\$5,087
Plus 10 acres water shed and support land with an indicated value of \$300 P/A x 10 =	<u>3,000.</u>	<u>3,000</u>	<u>3,000</u>
Total	$\frac{\$6,391.}{12 \text{ Ac. Value of Land}} = 532 \text{ P/A}$	$\frac{\$7,070}{12 \text{ Ac}} = 589$	$\frac{\$8,087}{12 \text{ AC}} = 674$

Conclusion:

Premise 1 has an indicated value of \$565 per acre. Premise 2 has an indicated value of \$532 per acre. Based on both premises, which appear to have validity, the indicated value for land is \$550 per acre at 12%. At 10% the indicated value would be \$630, and at 8% it would be \$760.

NOTE: The 10 acres of support land required and the value used for same of \$300 per acre is derived from the market based on land sales of wetlands having a highest and best use as passive recreation without affecting the quality of the bog. The conclusion drawn of \$550 to \$760 per acre is based on an average quality bog which, due to its location, requires ownership of the support land and water shed protection land by the owner.

It should be noted, however, that there are cranberry bogs located immediately adjacent to state owned lands, which afford these bogs their water shed and support land without the necessity of being held in private ownership. These bogs would therefore realize a higher per acre value than that shown in this average case situation.

As a second step in estimating agricultural land values, a study was made of the results of relevant work in the Agricultural Preservation Demonstration Program. This study was conducted in Burlington County during 1977 and 1978. Extensive work was done in three townships; Lumberton, Pemberton and Southampton. The program was established to evaluate easements which were to be voluntarily offered to the state, and the rights to be sold for development easements on the land. Of the three areas studied, Pemberton and Southampton are located within the Pinelands and further, are located in portions of the region set forth in the Commission's proposals as the Forest Area (F), the Agricultural Production Area (AP), the Rural Development Area (RD) and the Regional Growth Area (RG). Lumberton Township is located just west of the Pinelands.

A consideration of this study can be helpful since these properties had complete appraisals both in the before situation, predicated on a highest and best use as potentially developable land, and on an after basis with all development rights eliminated by easement. The study, recent in time, and being an analysis of development rights on specific properties, shows through a before and after technique, a measure of value for the total loss of development rights. Appraisals were conducted on approximately 4,500 acres and covered 33 specific properties which were totally analyzed. The results of this study are on Table VI. As indicated by this table, the average value of the development rights was approximately 71% of the fair market value with all rights intact. Procedures used in this demonstration program are acceptable standard appraisal practices in the measuring of a part of the bundle of rights on property values.

There have been other development rights programs conducted, one of which in Suffolk County, New York, indicated that when the development rights were removed from the land, its value decreased from approximately \$3,500 per acre to approximately \$1,000 per acre. This constitutes a value of the development easement of approximately 70%. This program was analyzed using the same procedure as

TABLE III-6

Agricultural Preservation Demonstration Program

Burlington County - Appraised Valued

	<u>Lumberton</u>	<u>Townships</u> <u>Pemberton</u>	<u>Southampton</u>	<u>Total</u>
Fair Market Value Per Acre	\$3,057.	\$2,652.	\$2,580.	\$2,773.
Number of Acres	1,666	1,221	1,687	4,574
Agricultural Value Per Acre	777.	893.	778.	808.
Value of Easement Per Acre	2,280.	1,760.	1,802.	1,965.
Value of Easement Total Value	75%	66%	70%	71%

Source: The Agricultural Preservation Demonstration Program: A Report to the People of New Jersey. N. J. Department of Agriculture.  
February 1979

the New Jersey Agricultural Preservation Demonstration Program with independent appraisals on each of the properties being considered. No two properties had exactly the same value for development potential or the same remainder value for agricultural use. There has been a sufficient period of time since this program was implemented to have some market reaction by virtue of sales which have occurred of land without development rights. These sales have reflected a value of between \$1,000 and \$1,500 per acre.

A new program is presently being conducted in Massachusetts by that State for the purchase of development rights for land under development pressure. This program has not been in operation for sufficient time to have elapsed for any lands encumbered by easements of all development rights to have been resold. However, the cost of development rights purchased in Massachusetts has varied from a low of \$517 per acre to a high of \$8,611 per acre depending on location, soils, topography, access to water and the development pressures attributable to each specific parcel.



3. Conclusions, Estimated Value for Agricultural Land - 100% Loss of Development Rights

The indicated values derived on a per acre basis was predicated on purely agricultural use of land in the post zone change period with the following conclusions:

Farmlands suitable for cranberries would have an indicated average value range of from \$550 to \$760 per acre.

Farmlands suitable for vegetables would have an indicated average value range of from \$825 to \$1,237 per acre.

Farmlands suitable for blueberries would have an indicated average value range of from \$667 to \$1,000 per acre.

Farmlands suitable for grain would have an indicated average value range of from \$367 to \$550 per acre.

If one considers the difference in the capitalization rates applied predicated on the 12% capitalization rate, the indicated average value range is from \$367 to \$825 per acre or a median of \$600 per acre. If one considers the 10% capitalization rate, there is an indicated average value range of from \$440 to \$990 per acre or a median of \$720 per acre. The 8% capitalization rates ranges from \$550 to \$1,237 or a median of \$900 per acre. Further, based on the Agricultural Preservation Demonstration Program, there is an indicated average agricultural value range of \$808 per acre. The value range on an average basis would therefore lie somewhere between \$600 per acre and \$808 per acre predicated on a highest and best use as agricultural land which in essence could be considered a residual value with all development rights eliminated.

4. Study of Land Sales and the Impact on Vacant Land not Suitable for  
Agricultural Use After the Implementation of the Plan

This analysis considers the total loss of development rights with the land having a highest and best use in the pre zone change period of residential development and a highest and best use as passive recreation in the post zone change period.

Residential Development  
Strong Development Pressure  
Average Land Value P/A  
\$3,600 P/A

Moderate Development Pressure  
Average Land Value P/A  
\$1,200 P/A

Low Development Pressure  
Average Land Value P/A  
\$600 P/A

No Development Pressure  
Average Land Value P/A  
\$300 P/A

Passive Recreation  
Average Land Value P/A  
\$300 P/A

Average Land Value P/A  
\$300 P/A

Average Land Value P/A  
\$300 P/A

Average Land Value P/A  
\$300 P/A

Conclusion

This study reveals the most extreme impact if all development rights were to be acquired, and there was no potential for all or any part of the land being suitable for agricultural purposes.

The most pertinent fact to consider in this study is that the development rights under the Comprehensive Management Plan are not 100% eliminated, that within each of the districts; namely Preservation Area, Forest Area and the Agricultural Production Area. The land still retains certain development rights, Further, the Pinelands development credits are applicable in two of these districts.

Although the average value per acre applicable in the pre zone change period can be applied, the average value in the post zone change period will be at some point between the \$300 per acre figure and the development value figures in each of the development pressure areas. The actual dollar amount of this value will depend on the location and all variables previously discussed in this report, as well as the district in which it is located.

5. Summary of Impact on Land Values Predicated on 50% Loss of Development Rights

A. Vacant Land Suitable for Agriculture

<u>Pre-Zone Change Period</u>	<u>Post-Zone Change Period</u>	<u>Post-Zone Change Period</u>
1. Highest and Best Use. Residential Development	Highest and Best Use: Agricultural-No other Development Rights	Impact on Land Value by Percent (Reduction) - 50% Loss of Development Rights
<u>Strong Development Pressure</u>		
Average Land Value P/A \$3,600 P/A	Average Land Value P/A: \$600 - \$800 P/A	42% - 39% **
<u>Moderate Devel. Pressure</u>		
Average Land Value P/A: \$1,200 P/A	Average Land Value P/A \$600 - 800 P/A	25% - 17%
<u>Low Development Pressure</u>		
Average Land Value P/A: \$600 P/A	Average Land Value P/A:	0% ***
<u>No Development Pressure</u>		
(Highest and Best Use; Passive Recreation)		
Average Land Value P/A: \$300 P/A	Average Land Value P/A: * \$600 - \$800 P/A Highest and Best Use: Passive Recreation \$300 P/A	
2. Highest and Best Use: Agricultural	Highest and Best Use: Agricultural - No other Development Rights	Impact on Land Value by Percent (Reduction) 50% Loss of Development Rights
Average Land Value P/A: (Based on sales sold for continued agricultural use) \$2,150 P/A	Average Land Value P/A:  \$600 - 800 P/A	37% - 31%

\* This would apply to any land that could be used for agricultural purposes. It is recognized that not all wetlands could be converted to agricultural use on a economic basis.

\*\* Worst Case

\*\*\* Best Case

Summary of Impact on Land Values Predicated on 50% Loss of Development Rights -  
Continued

B. Vacant Land Not Suitable for Agriculture

<u>Pre Zone Change Period</u>	<u>Post Zone Change Period</u>	<u>Post Zone Change Period</u>
Highest and Best Use: Residential Development	Highest and Best Use: Passive Recreation - No Development Rights	Impact on Land Value by Percent (Reduction) 50% Loss of Development Rights
<u>Strong Development Pressure</u>		
Average Land Value P/A: \$3,600 P/A	Average Land Value P/A: \$300 P/A	46%
<u>Moderate Level Pressure</u>		
Average Land Value P/A: \$1,200 P/A	Average Land Value P/A: \$300 P/A	38%
<u>Low Development Pressure</u>		
Average Land Value P/A: \$600 P/A	Average Land Value P/A: \$300 P/A	25%
<u>No Development Pressure</u>		
Average Land Value P/A: \$600 P/A	Average Land Value P/A: \$300 P/A	0%

6. Study of Impact on Land Values as Restricted by the Implementation of the Comprehensive Management Plan:

The plan restricts the use and intensity of the development of the land, but does not encumber the land by a 100% loss of development rights. Some development rights remain, and the loss potential has been considered by the Pineland Development Credits, or by development as permitted in each of the Districts.

Compared to the Farmland Preservation Project, the Comprehensive Management Plan is less severe in its effect on land.

As evidenced by the preceding studies, it is apparent that the impact on land values is extremely variable based on many factors, of which the following are the most pertinent:

The highest and best use of each parcel of land both in the pre-plan situation and the post plan situation:

The location of each parcel of land as it relates to either strong development pressure, moderate development pressure, low development pressure or no development pressure in the pre plan situation;

The physical character of each parcel of land whether it be uplands or wetlands, oil suitable for agricultural purposes or not suitable for such purposes in the pre plan or post plan period;

The size, shape, frontage and existing density permitted in the pre plan situation as to actual development potential and yield, and the specific district in which the parcel of land is located. In the post plan situation, the permitted density and restrictions of each of the areas; namely the Preservation Area District, Forest Area, Agriculture Production Area, Rural Development Area, Pinelands Villages, Towns or the Regional Growth Area;

The market value of the Pinelands Development Credits in the post plan situation, which would offset the potential loss in value as applicable to each parcel of land in the Preservation Area District Agriculture Production Area.

The transference of Pinelands Credits to the different districts and the multipliers applicable and the variations of values derived depending on the district to which it has been transferred.

This study clearly shows that it is not possible to apply a dollar value of total potential loss to the Preservation or Protection Area due

to the implementation of the Comprehensive Management Plan based on averages with any degree of certainty at this point in time. Further study is required and the only final conclusions which appear to be fully justified would require full appraisals of each parcel of land located within the Preservation and Protection Areas in order to estimate the actual loss, if any, in land values.

It is possible however, to establish a general framework for evaluating the aggregate effects of the plan on land values. There are approximately 1,160,000 acres within the boundaries of the Pinelands Area and, of these, about 830,000 are in private ownership. Privately-owned lands in the Preservation Area, the Forest Area and the Agricultural Production Areas amount to about 556,000 acres or 67 percent of total privately-owned lands. This total includes extensive wetland areas (78,000 acres in the Forest Area alone) and large expanses of remote lands. If one assumes an average value per acre of from \$600 to \$1200, the value range identified above for average properties under low to moderate development pressure, the aggregate value of lands in the three districts would range from \$333.6 million to \$667.2 million. Given the general character and location of these properties, it appears reasonable to expect that a majority of lands would be under no or extremely low development pressure in the pre-plan situation and in accordance with the previous analysis would experience no diminution in value overall. The impact of development restrictions on the remaining land area would vary significantly. If, for purposes of illustration, one assumes a general reduction in value of 16% to 25% (reflective of a 50% loss of development rights on lands subject to moderate development pressures) on the balance of the land area, the loss in value would amount to from \$96 to \$300 per acre or an aggregate of \$26.7 to \$83.4 million.

The indicated loss in values as reflected on a percentage basis in the summaries in section 5 is based on the assumption of a 50 percent

loss of development rights. The analysis does not take into consideration the Pinelands Development Credits applicable to the land in the Preservation Area and Agricultural Production Areas.

The impact on the Pinelands by the Comprehensive Management Plan will effect some parcels of land more adversely than others on an individual parcel basis, depending on all the variables discussed.

The Plan will beneficially effect the land values in the Regional Growth Area based on the reduced supply of sites available for intense development, thereby increasing market demand and fair market value.

Further consideration must be given to the impact on certain parcels of land which will be beneficial and not detrimental. An example of this would be reflected very strongly in the Agricultural Production Area whereby a parcel of land is not suitable for development due to its physical characteristics, in the pre zone change period. This parcel of land would have no loss in value, but would have an increment in value predicted upon one development credit for every 10 acres of land held in ownership. This development credit would return to the property owner a dollar value over and above the present worth of this land.

The impact on the land values in general for those parcels of land in the Preservation Area, Forest Area, Agricultural Production Area and Rural Development Area, if all development rights were restricted, appears to range from 0% to 91%. The plan restricts the density and offsets these restrictions by the Pinelands Development Credits applicable. Therefore, the percentage of potential loss would be offset by the remaining development rights and/or the value of the Pinelands Credits. To establish an average figure for these offsetting factors would require a full appraisal of each parcel of land in the pre zone change period and the post zone change period, and an analysis of the value of Pinelands Development Credits.

## B. The Pinelands Development Credit Program

The Pinelands Development Credit program is supplemental to the regulatory elements of the plan and provides an alternative use to property owners in the Preservation Area District, Special Agricultural Production Areas, and the Agricultural Production Areas. The program allocates to landowners in these restricted areas credits which can be purchased by land owners in growth areas and used to gain bonus residential densities. The credits thus provide a mechanism for landowners in the former areas to participate in any increase in development values which is realized in growth areas.

### Allocation of Credits

Under the development credit program, land in the Preservation Area District, Special Agricultural Production Areas and the Agricultural Production Areas is granted development credits. A landowner selling his or her credits is required to record a deed establishing a restriction which limits the future uses of his land to those allowed under the plan for the area in which the land was located.

The system of allocation of credits recognizes the elevated value of farmland and provides fewer credits to owners of non-productive wetlands. In the Preservation Area District, landowners are entitled to one credit for each 39 acres, or the appropriate fraction thereof. Wetlands yield only a fifth as many credits, or 0.2 credits for 39 acres--a ratio based on the comparative values of uplands and wetlands.



In agricultural areas, all uplands and areas of active agriculture, including berry agricultural bogs and fields, are allocated two development credits for 39 acres. Wetlands which are not active agricultural bogs or fields are allocated 0.2 credit for 39 acres.

In addition the program provides that lots between 0.1 acres and 9.75 acres as of February 7, 1979, will be allocated at least one-fourth of a credit provided that the property is vacant and not in common ownership with contiguous land.

Fractions of dwelling units can be aggregated from different transfers and used when a whole unit is assembled. Sale of credits would take place on the open market, using a legal instrument similar to a conventional property deed.

#### Use of Development Credits

Regional Growth Areas are designated as receiving areas for Pinelands Development Credits. Each credit can be used to obtain four bonus housing units. The Comprehensive Management Plan requires that local governments in the growth areas adopt land use regulations which utilize the development credit bonus system. Specifically, residential densities must be specified as a range. The low density establishes the base density for a zone, and the high density represents the maximum density that can be achieved through the use of development credits. The density ranges established by the plan are shown on Table III-7. The ranges are intended to allow increases in density levels but to maintain the same general housing type, thereby protecting the integrity of the neighborhood in which the credits are used. Each municipality should be zoned to accommodate a bonus housing capacity of at least 50 percent above the base density for developable land within the growth areas or a minimum of 1.0 bonus unit per acre, whichever is greater.

The success of the credit program rests on the ability of developers to

Table III -7

Residential Density Ranges Under Pinelands Development  
Credit Program

Predominant Housing Type	Maximum Dwelling Units/Acre	
	<u>Base Density</u>	<u>Bonus Density</u> (with credits)
Single Family Detached	a) less than .5	.5
	b) .5	1
	c) 1	2
	d) 2	3
	e) 3	4
	f) 4	6
Single Family Attached and Township		
	a) 6	9
	b) 9	12
	c) 12	*

\* Bonus density to be determined by municipalities. Municipalities may elect increased bonus density allowances in zones or portions of zones.

utilize credits to build at higher densities without any additional procedural delays or review requirements. To the degree that there are delays, or that incremental costs are imposed on projects involving credits, the economic value of the credit to a developer is impaired. To assure that development utilizing bonus densities can proceed as expeditiously as possible, municipal zoning ordinances must incorporate clear standards for development with credits.

#### Supply and Demand for Credits

The overall relationship between the potential supply and the projected demand for Pinelands Development Credits has been taken into account in designing the credit program. It is recognized that the creation of a viable market for credits depends on the existence of an adequate number of sites within the growth areas to realistically accommodate the credits that are allocated under the plan.

Based on an analysis of lands within the Preservation Area and Agricultural Production Areas, it is estimated that approximately 8315 development credits will be created pursuant to the allocation provisions described above. Theoretically, this amount of credits could all be utilized in the Regional Growth Areas with a multiplier of four to generate a total of 33,260 housing units. Realistically, it is not expected that this maximum will ever be realized for several reasons:

1) Significant numbers of credits will be kept off the market by the state as it proceeds with its Pinelands land acquisition program. It is estimated that upwards of 5,000 units would be reserved or eliminated in this way. 2) Some credits will not be utilized because landowners will elect to exercise development rights under the "grandfather" clause, rather than to sell development credits. 3) Lack of information, unclear title, or unwillingness to sell credits on the part of other owners is expected to further reduce the total number of credits in the market. Given these conditions, for planning purposes we have conservatively assumed a maximum housing unit potential that could be generated by credits of about 30,000 units.

Based on a bonus housing capacity equal to at least 50 percent of the base density in each growth area, or a minimum of 1 bonus unit/acre, it is projected that there would be capacity for as many as 70,000 bonus units in the Regional Growth Areas. This represents an overall ratio of capacity to available bonus housing units about 2.3 to 1.0 which is believed to be more than adequate to provide the necessary market for development credits. Atlantic County alone is projected to have the capacity for 22,650 bonus units, or about 75% of the projected bonus available units. Further, it should be noted that when development conditions and housing demand warrant, additional capacity for bonus units will be provided through the activation of Municipal Reserve Areas.

#### Projected Value of Pinelands Development Credits

The dollar value of a Pinelands Development Credit will depend ultimately on the profitability of the bonus density provisions for builders and developers in the growth districts. The basic premise of the credit program is that for each additional unit on a given parcel, the increase in revenues will be greater than the increase in costs. While the cost savings and attributable to lower per unit infrastructure costs (streets, sidewalks, sewers, utilities, etc.) and other economies of scale, the principal source of savings is reduced land costs. Residential land values per unit, thus, will be a major factor influencing the value of PDC's.

Residential land costs per unit vary significantly among different housing types; all things being equal, the higher the housing density on a particular site, the lower will be the per unit land costs. Thus, in general, townhouse and apartment units will have lesser land costs than single family units. The tendency of the real estate market to place a premium on sites which are capable of and suitable for higher density housing has a somewhat counterbalancing effect, however, and land costs per acre for multifamily sites typically will be much higher than for sites for one family homes.

Given a certain set of land value assumptions for various types of residential development, it is possible to estimate the land value increments associated with higher density development and, thus, identify potential values for the use of PDC's.

An illustrative example of such land value changes is presented on accompanying Table III-8 . The price which builder/developers would be willing to pay for PDC's, as indicated in this example, will be strongly influenced by land and housing market trends in local areas. The nature of the housing market in the Pinelands suggests that single family homes will continue to be the favored and predominant type of construction in the Regional Growth Areas, although, built at higher densities than occurred in the past. Accordingly it is likely that the price of PDC's will tend toward the value range indicated for single family development.

Table III-8

Illustrative Example of Land Value Changes with use of Pinelands Development Credits

a) base density

b) PDC density

HOUSING TYPE	No. of Units	Land Value Per Unit	Total Land Value	Value per PDC	PDC Value / Acre		
					Upland	Agr.	Wetland
Single Family							
a) 2 du's/acre	2	\$12000-\$15000	\$24000-\$30000	(x4)	(÷ 39)	(÷ 195)	(÷ .195)
b) 3 du's/acre	3	\$10000-\$12500	\$30000-\$37500	\$24000- 30000	\$615- 769	\$1230- 1538	\$123.0- 153.8
Townhouse							
a) 6 du's/acre	6	7500 - 9375	45000-65250				
b) 9 du's/acre	9	6000 - 7500	54000-67500				
Increment	3		9000 - 11250 or 3000 - 3750 per unit	12000- 15000	308- 385	615- 769	61.5 - 76.9
Apartments							
a) 15 du's/acre	15	3000 - 3750	45000-65250				
b) 20 du's/acre	20	2500 - 3125	50000-62500				
Increment	5		5000- 6250 or 1000- 1250 permit	4000- 6250	103- 160	206- 320	20.6- 32.1

## Value of a Pinelands Development Credit -- Hypothetical Example

In order to further test the value of a PDC, the following hypothetical example was formulated:

The Assumed Situation. A 50 acre parcel in the Regional Growth Area presently zoned for 3.5 units per acre. The desire is to increase the density to 4 units per acre. This would mean that the average lot would decrease in size from 90x100 square feet to 82x100 square feet, a reduction of some 800 square feet of lot area. The cost of the undeveloped 50 acres is \$]5,000 per acre or \$750,000. The land will be acquired with a 10% down payment with the remainder paid in annual increments plus 12% interest. The land acquisition payment schedule is:

Year	Payment
0	\$ 75,000
1	249,750
2	229,500
3	209,250
4	168,750

Land improvements are projected to be \$19,036 per acre. This is based upon 206 linear feet of lot frontage at \$92.25 per foot. Fees of \$543 per unit were used:

	Fee
water	\$ 100
sewer	100
building permit	125
sub-division	10
preliminary platt	10
specs	20
street inspection	160
final platt	10
Cert. of Occupancy	8
	\$ 543 per unit

Construction costs of \$35 per square foot of building space are projected. This is total contract price for a single family type structure of 1,700 square feet. The unit with the 90x100 lot has a price of \$82,000 while that with the

smaller lot is reduced by \$1 per square foot of lot space to \$81,200. Selling costs at 6% are as follows:

	<u>82x100</u>	<u>90x100</u>
sales price	\$82,000	\$81,200
selling costs	<u>4,920</u>	<u>4,872</u>
Net	77,080	76,328

It is assumed that both configurations could absorb into the market in four years. Annual cash flow is discounted at a rate of 15% to arrive at a residual value. The annual and discounted cash flow for each configuration are summarized in Table III-9.

In this analysis the value of the PDC would be the net increase in the discounted present value of the stream of returns to the land resulting from the increase in density. For the 50 acre parcel going from 3.5 units per acre to 4.0 units per acre, the net increase in land residual is computed to be \$169,817, representing \$6,793 per unit (25 units) or \$27,171 per Pinelands Development Credit. The value per sending acre is calculated by dividing the value of the PDC by 39 in the case of uplands in the Preservation Area, 195 in the case of wetlands and 19.5 in the case of Agricultural Production Areas. The resulting values are as follows:

Preservation Area	
Upland	\$697
Wetland	139
Agricultural Area	1,394

It should be noted that these values relate only to the hypothetical example presented and that other development configurations could, of course, yield different values.

Table III - 9

## Discounted Cash Flow Analysis for PDC Hypothetical Example

CASH FLOW AND RETURN@ 3.5

<u>YEAR</u>	<u>LAND</u>	<u>IMPROVEMENTS</u>	<u>FEES</u>	<u>CONST. COST</u>	<u>NET REVENUE</u>	<u>CASH FLOW</u>	<u>PRESENT VALUE @ 15%</u>
0	75,000	0	0	0	0	- 75,000	-75,000
1	249,750	341,062	23,756	2,603,125	3,372,250	154,557	134,397
2	229,500	317,267	23,756	2,603,756	3,372,250	198,602	150,172
3	209,250	317,266	23,756	2,603,125	3,372,250	218,853	143,899
4	<u>168,750</u>	<u>0</u>	<u>23,756</u>	<u>2,603,125</u>	<u>3,372,250</u>	<u>576,619</u>	<u>329,684</u>
TOTALS	932,250	975,595	95,024	10,412,500	13,489,000	1,073,631	683,152

@ 4.0

0	75,000	0	0	0	0	- 75,000	-75,000
1	249,750	341,062	27,150	2,975,000	3,807,000	214,038	186,120
2	229,500	317,267	27,150	2,975,000	3,807,000	258,083	195,148
3	209,250	317,266	27,150	2,975,000	3,807,000	278,334	183,009
4	<u>168,750</u>	<u>0</u>	<u>27,150</u>	<u>2,975,000</u>	<u>3,807,000</u>	<u>638,100</u>	<u>363,692</u>
TOTALS	932,250	975,595	108,600	11,900,000	15,228,000	1,311,555	852,969

Change in discounted land residual      \$ 169,817



#### IV. IMPACT ON LOCAL GOVERNMENT FINANCE

The Comprehensive Management Plan, to the extent that it does lead to a shift in land values in some areas, may cause corresponding shifts in the local property tax base of the affected municipalities. In considering the fiscal effects of the Plan on local government, however, a number of diverse factors must be taken into account.

First, the total combined impact of the land use regulations on real estate valuations in each municipality needs to be analyzed; the Plan will have differing effects on different properties, enhancing some, depreciating others and neutral in regards to others. Second, municipal taxation and assessment policies need to be examined to determine to what extent they may mitigate the effects of the Plan. The amount of land subject to the farmland assessments program, for example, varies significantly among Pinelands jurisdictions; such assessments will be unaltered by the Plan. Due to a general tendency for underassessment at the local level, it is likely that low assessment - sales ratios will effectively limit any further reductions in assessed valuations in some areas, even if absolute dollar declines in property values were to occur. Third, there is the time factor. After a period of initial adjustment in property values following the implementation of the Plan, one can expect a

continuous appreciation in the value of virtually all properties as well as the development of new ratables. Both of these factors will serve to enhance the local property tax base, offsetting some if not all the loss in value which might have been experienced as a result of the plan.

In the following chapter, the potential impact of the plan on the tax base of local governments in the Pinelands is analyzed to determine how many and to what degree municipalities might be expected to experience adverse financial effects as a result of the plan. The impacts of the plan on local government costs are also examined with particular concern to the direct costs which may be imposed on municipalities with the implementation of the Plan. Public capital improvement costs associated with residential growth are discussed in general terms to provide an indication of the long-term implications of the plan on public sector expenditures.

#### A. Impact on Property Tax Base

##### Role of Local Property Tax

Many factors are considered by public policymakers before a tax is levied upon a particular item of personal or real property, earnings, or activity, and the method of taxation as well as the rate structure of the particular tax will reflect these considerations. Normative evaluative criteria such as equity, efficiency, and ease of administration are usually foremost among the factors for analysis. Some taxes may have additional social or behavioral objectives such as those which seek to discourage consumption of certain goods and "non-essential" services, the higher price perhaps serving as a disincentive. Yet,

one of the most important public finance considerations in the development and implementation of each tax levy is its revenue productivity. As such, the real property tax has traditionally been the most important source of funding for local governments and remains the primary strength behind the local government's role as a service provider. It is the basic revenue productivity of this readily accessible tax base which is of concern to this fiscal analysis.

In the State of New Jersey, a standard ad valorem tax is applied to real estate and tangible personal property of telephone and telegraph companies. The property tax is a local tax. However, it is assessed (valued for taxation) by the certified local assessors in each municipality, and collected by the municipalities for the support of municipal and county governments and local school districts.<sup>1</sup> Accordingly, the taxpayers in these jurisdictions pay in proportion to the assessed value of taxable property owned by each taxpayer.

The amount of local property tax and the corresponding rate of tax per assessed value is actually determined by each New Jersey municipality in order to supply the revenue required to meet budgeted expenditures not covered by monies available from all other sources. Thus, school districts and counties annually notify municipalities of their property tax requirements, to which municipalities add their own, and taxes are levied to raise the entire amount. It is the local budgets and the "residual" need, which then determine the amount of total property tax, not the property valuations or tax rates.

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<sup>1</sup> The State does levy a uniform special rate upon certain railroad property, bank shares, and the equipment of non-utility businesses. This levy accounts for only three percent of all New Jersey property tax revenue, the balance comes from local general property taxes.

In the case of real property taxation, each county board of taxation may additionally adjust the assessment or taxable value of each property upon which the tax is levied, so that it will reflect a given percentage of "true value", which is usually a higher percentage or assessed valuation of actual sales price. New Jersey assessments are required to be not lower than 20% or higher than 100% (usually in multiples of 10) of this true (assessment-sales) ratio, except in the case of land qualified for specially valued farmland assessment. All New Jersey counties have adopted the 100% ratio for their current assessment practices.

Assessment practices as well as cancellations, adjustments, abatements, and foreclosures may all affect the total property taxes collected in a given year. A local government's budget will typically anticipate some shortfalls in these areas, however, and plan its rates of taxation and revenue sources to compensate for these revenues foregone. Where local assessments are expected to appreciate rapidly, there may be a reduction in the local tax rate levied to raise the revenues necessary to meet a given annual level of expenditures. If municipal expenditures per capita were to rise or local government services were to expand at the time of the appreciation, the residual local government budget needs might additionally be met with this expanded property tax revenue base. Of course, other state and federal revenue sources and alternative debt and tax sources might also be employed to finance a larger budget.

The situation wherein real property valuations are expected to depreciate are of critical note here, however; in most cases, local government budgets will not also be deflated. Maintenance of current service levels, debt requirements, established thresholds for

economies of scale, or state and federally mandated expenditures may preclude a reduction in the size of local budgets. Certain economies can be realized through the reduction or stabilization in population growth or, for example, through the changing land use patterns which may accompany the property reevaluations which may occur in the Pinelands. Yet, where these depreciations in the tax base do occur, it is generally the practice of local governments to restore the "lost" revenues by establishing a new increased property tax rate.

#### Analysis of Property Tax Impact of Plan

The estimated potential fiscal impact of the Comprehensive Management Plan has been quantified in this analysis by developing a tax base impact matrix and valuation estimate for each jurisdiction within the Pinelands. Through the use of available data and the application of some possible valuation trends for the areas in a township which fall within development or restricted Pinelands regions, the matrices identified certain broad parameters of estimated tax base changes. The set of tax base impact matrices for the Pinelands list the current, highest, lowest and mean percentage changes in the tax base for each local government in the Pinelands under each valuation assumption.

The data which was used in the tax base impact matrix includes:

1) the percentage of 1978 tax base that is vacant land, as defined by the 1978 Statement of Financial Conditions of Counties and Municipalities;<sup>1</sup>

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<sup>1</sup> New Jersey Department of Community Affairs, Division of Local Government Services, 41st Annual Report of the Division of Local Government Services, Statement of Financial Condition of Counties and Municipalities (Trenton N.J.: 1978).

2) the percentage of vacant, non-public land in development districts; (Regional Growth and Rural Development Districts and Pinelands Towns);

3) the percentage of vacant land in restricted districts (Preservation, Forest, and Agriculture Districts), and

4) the percentage of a jurisdiction's land area that is within the Pinelands's jurisdiction.

Other multipliers were developed and criteria were employed as necessary and where possible, to further refine and target the analysis so that it would measure only the impacts directly related to the plan's proposed activity.

In calculating the total vacant, non-public land, which was the basis for the matrix valuations, developed land and land in active agricultural use was subtracted from the total land area, along with state and federal public landholdings. The rationale for so doing directly relates to the specific issues of public and private financial concern which required this analysis. The land which is presently developed was excluded because its valuation is largely determined by existing development and market forces which support the current developed character of the land. The Pinelands management plan does not regulate developed areas and thus will not directly impact their assessment. Nor will the management plan affect the assessed value of publically owned lands inasmuch as assessments of these properties are either frozen, subject to limitations, or never made because they are state or federally-owned. Moreover, except for the partial payments made under the in-lieu of tax programs such as the Green Acres and local services for state property, the valuation or assessment of the property will typically

not reflect full market conditions or full value ratables.

Lands in active agricultural use are excluded from the tax base evaluation in the impact matrix. The reason for this exclusion is the assumption that these lands are under agricultural assessment or "farmland assessment", as provided by the N.J. Farmland Assessment Act of 1964. The Farmland Assessment Act authorizes and mandates assessment of qualified farmland on the basis of its productivity value in agriculture or horticulture rather than on the basis of its market value.

Since farmland assessments are determined on the basis of agricultural income rather than comparable land sales, they will not be affected by the implementation of the Comprehensive Management Plan. In municipalities where there is substantial acreage under farmland assessment, the impacts on assessments due to the plan will be minimized. Table IV-1 summarizes the amount of land in each municipality which is currently subject to agricultural assessment; it also indicates the relative share of total municipal valuations classified as farm and vacant land (i.e. non-farm) respectively as of 1978. As indicated above, it is the vacant land category which will be subject to impact by the Plan. The following municipalities with more than 25 percent of their open land under agricultural assessment and less than 10 percent of their real estate valuations cannot be affected except in a minor way by the Plan.

	Qualified Farmland as % of Total Area (1980)	Valuation Non-farm Vacant Land (1978)
Atlantic Co.		
Buena B.	40.9	2.5%
Hammonton	26.1	3.8

Table IV-1

## Farmland Assessment and Farm and Vacant Land Valuations in the Pinelands Municipalities

Farmland Assessment, 1980 Tax Year					
	Total Acres	Farm Qualified		1978	
		Acres	%	% of Total Real Estate Valuation Farm	Vacant Land
Atlantic County					
Buena B.	5,056.0	2065.8	40.86	11.58%	2.45%
Buena Vista Twp.	26,451.2	3778.7	14.10	13.47	21.18
Corbin City				4.04	13.99
Egg Harbor City	7,097.6	-0-	-0-	--	2.04
Egg Harbor Twp.	42,585.6	1249.31	2.93	.76	15.27
Estell Manor City	33,996.8	7243.50	21.31	10.82	52.80
Folsom B.	5,625.6	-0-	-0-	1.28	9.92
Galloway Twp.	58,720.0	3859.93	6.57	3.35	19.05
Hamilton Twp.	73,632.0	12438.28	16.89	3.17	22.72
Hammontown Town	25,907.2	6765.95	26.12	7.92	3.78
Mullica Twp.	35,020.8	1718.39	4.91	1.95	24.44
Port Republic City				3.33	14.01
Weymouth Twp.	7,756.8	-0-	-0-	11.06	25.97
Burlington County					
Bass River Twp.	50,976.0	6925.27	13.59	2.63	36.56
Evesham Twp.	18,976.0	7324.84	38.60	2.68	8.85
Medford Lakes B.	780.8	-0-	-0-	-0-	.88
Medford Twp.	25,804.8	8673.13	33.61	2.19	11.88
New Hanover Twp.	13,984.0	902.70	6.46	7.97	5.23
North Hanover Twp.	11,708.4	6977.80	62.99	14.05	6.70
Pemberton Twp.	41,286.4	15519.25	37.59	3.13	9.58
Shamong Twp.	29,830.4	3950.66	13.24	6.17	17.49
Southampton Twp.	27,270.4	13203.18	48.42	7.49	8.64
Springfield Twp.	18,931.2	14213.39	75.08	29.34	4.31
Tabernacle Twp.	30,969.8	9445.29	30.50	7.36	18.76
Washington Twp.	68,556.8	8750.47	12.76	12.13	12.24
Woodland Twp.	61,043.2	11946.00	19.57	5.19	63.20
Wrightstown B.	1,120.0	40.26	3.59	.22	3.11
Camden County					
Berlin B.	2,278.4	358.9	15.75	.66	5.80
Berlin Twp.	2,092.8	83.6	4.00	.52	9.91
Chesilhurst B.	1,209.6	-0-	-0-	--	16.30
Waterford Twp.	22,003.2	2271.3	10.31	3.50	8.01
Winslow Twp.	37,164.8	7711.0	20.75	6.05	15.70



Table IV-1  
cont'd

	Farmland Assessment 1980 Tax Year			1978 % of Total Real Estate Valuation	
	Total Acres	Farmland Assessment		Farm	Vacant Land
	Acres	%			
Cape May County					
Dennis Twp.	41,664.0	3406.4	8.18	8.78%	21.67%
Middle Twp. (Reserve)				2.09	11.59
Upper Twp	41,299.2	1476.7	3.58	.95	16.19
Woodbine B.	5,120.0	87.0	1.70	6.67	8.16
Cumberland County					
Maurice River Twp.	60,608.0	450.5	.74	3.59	28.24
Vineland City	44,480.0	7938.7	17.85	2.87	3.85
Gloucester County					
Franklin Twp.	34,643.2	12033.4	34.74	10.28	13.31
Monroe Twp.	29,760.0	6772.9	22.76	6.11	10.89
Ocean County					
Barneqat Twp.	23,230.0	499.2	2.58	.32	29.26
Beachwood B.				--	9.46
Berkeley Twp.	25,702.4	238.0	.93	.12	12.40
Dover (Reserve)	28,179.2	491.6	1.74	1.13	6.75
Eagleswood Twp.	10,944.0	-0-	-0-	.43	41.34
Jackson Twp.	64,512.0	1506.3	2.33	.86	17.42
Lacey Twp.	55,340.8	311.0	.56	.10	22.71
Lakehurst B.	742.4	-0-	-0-	--	3.57
Little Egg Harbor Twp.	30,848.0	18.0	.06	.05	13.03
Manchester Twp.	52,672.0	386.1	.73	.11	13.49
Ocean Twp.	320.0	-0-	-0-	--	15.85
Plumsted Twp.	26,048.0	7295.6	28.01	11.32	8.19
South Toms River B.	896.0	-0-	-0-	--	4.45
Stafford Twp.	29,376.0	670.7	2.28	.14	28.70
Tuckerton (Reserve)				--	9.68

Source: Published Reports of N.J. Division of Taxation and N.J. Division of Local Government Services

Burlington Co.		
Evesham	38.6	8.9
Pemberton	37.6	9.5
Southampton	48.4	8.6

Other municipalities are shown to have substantial lands under farm-land assessment but a significant share of their ratables are still in the form of non-farm vacant land and thus may be affected by the plan.

The additional lands which are included in the Pinelands Agricultural Districts but are not classified as farmland remain in the total of vacant land use in this analysis. Table IV-2 provides a summary of vacant land valuations for each municipality and indicates the percent shares of each municipality which falls within the Pinelands.

The set of tax bases impact matrices is shown in the appendix with a key for their interpretation and analysis. Note that under the best case, no local governments would have any depreciation in their tax base, and would require no property tax increases. Under the medium or average case, a mixture of appreciation and depreciation in affected property values is assumed. Under the "worst case", a 30 percent depreciation and no appreciation was assumed for the vacant non-agricultural private lands which would be in restricted districts under the Plan. While the last case is not judged to be realistic because it completely excluded potential appreciation in the vacant land, it is included to illustrate the maximum negative impact upon the local property tax base.

For the medium impact situation, the assumptions were an average decrease of 15 percent on valuations for lands in restricted areas and an average increase of 10 percent for lands in growth areas. Under these conditions, it is found that of a total of 50 municipalities\*, 28 would experience a less

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\* Five municipalities are excluded from the analysis because their land in the Pinelands were predominately military installations.

TABLE IV-2

## REAL PROPERTY DATA FOR PINELANDS MUNICIPALITIES

1978 Real Property Valuations				
	Vacant Land <sup>1</sup>		Total Valuation	% Of Municipality In Pinelands
	% Of Total Tax Base	Valuation (\$)		
<b>Atlantic County</b>				
Buena B.	2.45	\$ 815,500	33,217,400	47
Buena Vista Twp.	21.18	11,675,430	55,122,455	90
Corbin City	13.99	476,900	3,409,700	100
Egg Harbor City	2.04	876,100	42,910,000	100
Egg Harbor Twp.	15.27	35,276,700	231,008,400	52
Estell Manor City	52.80	8,454,720	16,012,517	100
Folsom B.	9.92	1,456,055	14,679,285	100
Galloway Twp.	19.05	24,880,900	130,594,500	67
Hamilton Twp.	3.14	32,501,600	1,035,010,250	97
Hammontown Town	3.78	2,964,875	78,440,850	100
Mullica Twp.	24.44	11,981,650	49,026,600	100
Port Republic City	14.01	1,040,550	7,427,350	32
Weymouth Twp.	25.97	2,520,500	9,706,280	100
<b>Burlington County</b>				
Bass River Twp.	36.56	10,780,810	29,484,150	100
Evesham Twp.	8.85	17,314,530	195,656,050	75
Medford Lakes B.	.88	481,846	54,994,316	77
Medford Twp.	11.88	30,169,900	254,054,100	100
New Hanover Twp.	5.23	343,200	6,564,550	88
North Hanover Twp.	6.70	2,197,800	32,795,820	100
Pemberton Twp.	9.58	24,905,250	260,081,645	91
Shamong Twp.	17.49	8,483,050	48,505,850	100
Southampton Twp.	8.64	11,232,550	129,989,170	74
Springfield Twp.	4.31	1,503,350	34,845,300	2
Tabernacle Twp.	18.76	11,168,450	59,521,400	100
Washington Twp.	12.24	1,438,420	11,752,995	100
Woodland Twp.	63.20	17,480,605	27,661,290	100
Wrightstown B.	3.11	232,350	7,472,232	73
<b>Camden County</b>				
Berlin B.	5.80	4,947,375	85,339,573	10
Berlin Twp.	9.91	5,089,050	51,347,750	17
Chesilhurst B.	16.30	2,459,200	15,083,400	100
Waterford Twp.	8.01	3,748,225	46,815,320	100
Winslow Twp.	15.70	34,649,500	220,652,000	80

Table IV-2  
cont'd

Cape May County				
Dennis Twp.	21.67	\$ 9,277,040	\$ 42,813,340	86
Middle Twp. (Reserve)	11.59	13,515,400	116,584,525	21
Upper Twp	16.19	19,800,100	122,270,350	84
Woodbine B.	8.16	1,061,500	13,014,800	100
Cumberland County				
Maurice River Twp.	28.24	6,477,317	22,937,701	91
Vineland City	3.85	21,288,400	553,117,400	7
Gloucester County				
Franklin Twp.	13.31	15,777,500	118,532,100	36
Monroe Twp.	10.89	21,316,900	195,742,400	67
Ocean County				
Barneget Twp.	29.26	32,062,900	109,562,300	100
Beachwood B.	9.46	9,247,400	97,733,300	24
Berkeley Twp.	12.40	31,814,300	256,578,400	53
Dover (Reserve)	6.75	66,351,200	982,389,000	3
Eagleswood Twp.	41.34	6,518,700	15,768,300	100
Jackson Twp.	17.42	55,167,000	316,653,346	55
Lacey Twp.	22.71	55,687,368	245,209,723	100
Lakehurst B.	3.57	742,200	20,763,400	100
Little Egg Harbor Twp.	13.03	15,772,500	121,057,200	100
Manchester Twp.	13.49	43,854,150	325,132,750	87
Ocean Twp.	15.85	14,564,300	91,893,600	100
Plumsted Twp.	8.19	3,335,400	40,730,400	53
South Toms River B.	4.45	1,397,500	31,423,300	53
Stafford Twp.	28.70	47,299,890	164,810,640	100
Tuckerton (Reserve)	9.68	3,130,100	32,338,300	100

<sup>1</sup>Vacant land is idle lands containing no structure and not devoted to a specific use.

SOURCE: N.J. Pinelands Commission; N.J. Department of Community Affairs,  
41st Annual Report of Division of Local Government Services, (Trenton, N.J.: 1978)

than 1 percent change in their respective tax bases, 1 would experience an increase of more than 1 percent and 21 would experience decreases of more than 1 percent.

Table IV-3 lists the Pinelands jurisdictions which were identified in the tax base impact analysis as having a 5 percent or 10 percent estimated depreciation in the total local government tax base under the medium and worst case assumptions. Only 3 jurisdictions would experience a 10 percent or more decline under the worst case assumptions; none are so identified under the average case. The same three jurisdictions would experience a decline of 5-10 percent under the average case situation.

If the negative property tax impacts are measured by a ten percent depreciation in the vacant, non-agricultural private acreage tax base, rather than the total base, sixteen jurisdictions are so impacted under the average case assumptions and 35 jurisdictions impacted under the worst case assumptions. Table IV-4 shows the estimated percentage and absolute value reduction, in the total tax base and the corresponding reductions in tax revenues for each of these 35 impacted jurisdictions<sup>1</sup>

A summary of the findings shown in the Table IV-4 reveals the following with regard to the worst impact situation:

- The maximum estimated reductions in municipal valuations occur in Lacey Township (\$14,859,709), Stafford Township (\$9,789,714), and Manchester Township (\$9,201,257), respectively.
- The maximum estimated reductions in municipal tax revenues occur in Lacey Township (\$224,382), Hamilton Township (\$220,312) and Stafford Township (\$203,626), respectively.

The foregoing analysis suggests that the property tax impacts related to the implementation of the Pinelands Plan are not significant. Only a small number of the communities have a substantive reduction to property tax revenues which might be reflected in a higher property tax rate.

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<sup>1</sup>See appendix for summary table with data for all municipalities.

TABLE IV-3

## PINELANDS JURISDICTIONS WITH A 5% OR 10% ESTIMATED DEPRECIATION

## IN TOTAL TAX BASE

## UNDER WORST CASE AND AVERAGE CASE ASSUMPTIONS

	With Greatest (30%) Depreciation		With Average (15%/10%) Depreciation/Appreciation	
	5%	10%	5%	10%
Atlantic County				
Estell Manor City		-15.84	-7.92	
Mullica Twp.	-6.85			
Weymouth Twp.	-7.79			
Burlington County				
Bass River Twp.		-10.75	-5.30	
Woodland Twp.		-18.96	-9.48	
Cape May County				
Dennis Twp.	-5.14*			
Cumberland County				
Maurice River Twp.	-7.03			
Ocean County				
Barnegat Twp.	-6.14			
Eagleswood Twp.	-7.32			
Lacey Twp.	-6.06			
Stafford Twp.	-5.94			

\* Falls below 5% after adjustment for estimated percentage of township in Pinelands.

Table IV-4

Decrease in Assessed Valuation and Tax Revenues Under  
Worst Case Assumptions for Selected Municipalities<sup>1</sup>

	Percent Decrease	Dollar Decrease	% of Municipality in Pinelands	Adjusted <sup>2</sup> Dollar Decrease	1978 Tax Rate	Estimated Tax Loss
Atlantic County						
Buena B.	- .37%	\$ 122,904	47%	\$ 57,765	3.36	\$ 4,130
Buena Vista Twp.	-2.51	1,383,574	90		3.57	49,394
Corbin City	-4.20	143,207	100		2.14	3,065
Egg Harbor City	- .49	210,259	100		2.90	6,098
Egg Harbor Twp.						
Estell Manor City	-15.84	2,536,383	100		2.67	67,721
Folsom B.	-2.59	380,193	100		4.44	16,880
Galloway Twp.						
Hamilton Twp.	- .58	6,003,060	97		3.67	220,312
Hammontown Twp.	- .96	753,032	100		4.74	35,694
Mullica Twp.	-6.85	3,358,322	100		3.06	102,765
Port Republic City	-4.20	311,949	32	99,824	3.70	3,693
Weymouth Twp.	-7.79	756,119	100		3.07	23,213
Burlington County						
Bass River Twp.	-10.75	3,169,545	100		2.48	78,605
Evesham Twp.						
Medford Lakes B.						
Medford Twp.						
New Hanover Twp.						
North Hanover Twp.						
Pemberton Twp.	-1.81	4,707,478	91		2.18	102,623
Shamong Twp.	-4.44	2,153,660			1.88	40,489
Southampton Twp.	-1.48	1,923,840			1.90	36,553
Springfield Twp.						
Tabernacle Twp.	-4.50	2,678,463			2.15	57,587
Washington Twp.	-3.67	431,335			3.17	13,673
Woodland Twp.	-18.96	5,244,581			2.08	109,087
Wrightstown B.						
Camden County						
Berlin B.						
Berlin Twp.						
Chesilhurst B.						
Waterford Twp.	- .82	383,886	100		4.54	17,428
Winslow Twp.	-2.35	5,185,322	80		2.51	130,152

TABLE IV-4  
cont'd

	Percent Decrease	Dollar Decrease	% of Municipality in Pinelands	Adjusted Dollar Increase	1978 Tax Rate per \$100	Estimate Tax Loss
<b>Cape May County</b>						
Dennis Twp.	- 5.14	2,200,606	86		2.14	\$47,097
Middle Twp. (Reserve)	- 2.92	3,402,268	21	\$ 714,477	3.30	23,578
Upper Twp	- 3.84	4,695,181	84		.58	27,232
Woodbine B.						
<b>Cumberland County</b>						
Maurice River Twp.	- 7.03	1,612,520	91		4.24	68,371
Vineland City	- .91	5,033,368	7	352,336	3.08	10,852
<b>Gloucester County</b>						
Franklin Twp.						
Monroe Twp.	- .75	1,468,068	67	983,618	3.09	30,394
<b>Ocean County</b>						
Barneqat Twp.	- 6.14	6,727,162	100		2.48	166,834
Beachwood B.						
Berkeley Twp.	- 2.20	5,644,725	53	2,991,704	2.97	88,854
Dover (Reserve)						
Eagleswood Twp.	- 7.32	1,154,240	100		3.16	36,474
Jackson Twp.	- 2.14	6,776,382	55	3,727,010	2.77	103,238
Lacey Twp.	- 6.06	14,859,709	100		1.51	224,382
Lakehurst B.						
Little Egg Harbor Twp.	- 2.35	2,844,844	100		3.01	85,630
Manchester Twp.	- 2.83	9,201,257	87		1.56	143,540
Ocean Twp.	- 2.14	1,966,523	100		2.34	46,017
Plumsted Twp.						
South Toms River B.						
Stafford Twp.	- 5.94	9,789,714	100		2.08	203,626
Tuckerton (Reserve)						

<sup>1</sup> List includes municipalities which experienced 10% decrease in vacant land valuations under worst case assumptions.

<sup>2</sup> Adjustment made to municipalities with less than 75 percent of land area in Pinelands.



Moreover, the identified impacts on these local governments are greatly overstated when current valuation and appraisal conditions and trends are considered. Analysis of assessment-sales ratios indicates wide variation in the assessment of properties within the same taxing districts and among different taxing districts. A study of land sales transactions in 10 municipalities revealed a range from .17 to 2.20 in the assessment sales ratio during the 1977 - 1979 period. The average assessment-sales ratios for different classes of properties in the Pinelands municipalities are presented in Table IV-5. This data suggest widespread under assessment of vacant land at the local level at the present time. Given this situation, it is very possible that reductions in vacant land valuations which do occur will not be reflected in real property assessments. Any revaluation which did occur would in many cases result in general upward adjustment of property values.

It may well be that the direct or indirect effects of the Pinelands plan will enhance the value of presently developed lands but, to be conservative and due to the difficulty in quantifying these and other positive trends, these potential impacts are not given major focus in this analysis. The Pinelands Development Credit, for example, can be expected to enhance the value of certain lands, yet factors such as these were not specifically identified for their appreciation or depreciation effects. Due to these mitigating factors, it is concluded that the impacts resulting from the "worst case" situation, which assumed a 30 percent depreciation in the values of restricted lands and no offsetting appreciation, can be largely discounted. Some appreciation in ratable values will occur in these areas - as a result of aggregate market and financial conditions as well as increased ratables and enhanced valuations within the context of the plan.

TABLE IV-5

## AVERAGE ASSESSMENT - SALES RATIO IN PINELANDS AREA, BY TAXING DISTRICT AND

		PROPERTY CLASS, 1979					
		Vacant Land		Residential		Business	
		#Parcels	Ratio	#Parcels	Ratio	#Parcels	Ratio
Atlantic County							
Buena B.		5	44.67	31	69.08		
Buena Vista Twp.		32	51.97	59	68.19		
Corbin City		4	58.37	2	72.14		
Egg Harbor City		3	142.40	42	93.33	5	114.78
Egg Harbor Twp.		49	79.38	133	81.20	2	80.15
Estell Manor City		20	82.60	9	70.34		
Folsom B.		13	42.77	25	51.17		
Galloway Twp.		105	55.25	163	64.64	5	53.75
Hamilton Twp.		174	35.02	146	45.16		
Hammontown Twp.		26	31.87	93	40.87	6	76.57
Mullica Twp.		87	43.85	71	62.22	1	56.80
Port Republic City		3	27.13	11	44.76		
Weymouth Twp.		12	40.70	8	59.65		
Burlington County							
Bass River Twp.		1	54.50	18	81.89		
Evesham Twp.		30	57.40	512	59.20	2	49.53
Medford Lakes B.		5	47.73	141	59.18		
Medford Twp.		60	73.09	296	80.39	6	78.63
New Hanover Twp.				2	94.68		
North Hanover Twp.		13	88.69	18	67.58	3	75.65
Pemberton Twp.		77	100.16	476	95.39		
Shamong Twp.		8	55.00	26	89.56		
Southampton Twp.		4	89.43	43	83.77	1	138.93
Springfield Twp.		6	74.94	28	71.76		
Tabernacle Twp.		17	80.39	42	82.36		
Washington Twp.		7	55.79	2	43.78		
Woodland Twp.		20	63.25	8	71.07		
Wrightstown B.		1	62.50	4	59.62	3	55.84
Camden County							
Berlin B.		5	75.39	56	89.30	4	83.12
Berlin Twp.		5	72.25	54	78.93	1	78.92
Chesilhurst B.		3	125.95	15	89.72	2	105.51
Waterford Twp.		2	69.57	37	97.49	4	104.89
Winslow Twp.		9	112.68	323	89.93	1	111.73

TABLE IV-5  
cont'd

	Vacant Land		Residential		Business	
	#Parcels	Ratio	#Parcels	Ratio	#Parcels	Ratio
Cape May County						
Dennis Twp.	67	66.08	61	63.31	1	137.33
Middle Twp. (Reserve)	46	65.95	73	82.82	9	96.57
Upper Twp	85	60.93	117	73.56	5	74.12
Woodbine B.	3	28.95	26	79.34	3	95.53
Cumberland County						
Maurice River Twp.	17	40.01	37	62.70		
Vineland City	72	96.45	480	86.45	32	95.23
Gloucester County						
Franklin Twp.	73	69.37	111	74.38	3	94.86
Monroe Twp.	40	72.29	243	76.28	10	101.57
Ocean County						
Barnegat Twp.	36	70.02	204	87.85		
Beachwood B.	96	104.24	166	95.58	3	100.36
Berkeley Twp.	106	39.06	451	60.90	1	65.80
Dover (Reserve)	251	57.31	1641	64.70	30	75.85
Eagleswood Twp.	8	77.46	30	52.47	1	70.00
Jackson Twp.	88	83.85	410	80.60	7	82.95
Lacey Twp.	72	56.92	352	68.79	1	90.72
Lakehurst B.	3	111.75	40	95.97		
Little Egg Harbor Twp.	90	46.98	348	64.20	1	31.29
Manchester Twp.	112	75.38	139	77.60	2	97.01
Ocean Twp.	22	87.07	146	84.20		
Plumsted Twp.	10	99.13	28	83.78	2	95.51
South Toms River B.	3	60.50	95	78.47	1	85.14
Stafford Twp.	198	59.67	319	45.58	3	50.43
Tuckerton (Reserve)	9	72.82	75	67.24	2	80.27

NOTE: Data is based on number and value of "usable sales" recorded in 1979.

SOURCE: New Jersey Department of the Treasury, Division of Taxation, Average Assessment - Sales Ratio in New Jersey by Taxing District by property class (Trenton, N.J. : 1980).

## B. Impact on Local Government Public Costs

Under the Comprehensive Management Plan, local governments are required to develop and implement their own plans so that they are consistent with the Pinelands Plan. This activity will involve a public expenditure of funds in order to carry out the planning and financial management activities necessary to bring existing planning and zoning in conformance with the Plan and reassess the property tax base to reflect current market valuation. However, the actual additional cost to each government will vary according to the character of the affected community, the resource capacity of the municipality and/or county, and the condition of its planning, zoning and tax information.

The existing planning staff and technical resources in each county, municipality and at the Pinelands Commission should be used to minimize the costs and duplication of these activities. Reliable estimates of the planning costs to the medium size Pinelands local government range from \$12000 to \$20000 for full development and adoption of a new master plan and zoning ordinances. Using an average cost of \$16000, the total costs for 52 local government units can be estimated at \$832000. Currently, \$23000 in planning assistance monies have already been given to five counties and approximately \$300000 remains available to distribute to the area's municipalities and counties. The formulas for the distribution of these funds may vary, but assuming a division into 52 equal parts would provide approximately \$5770 to each community, an amount that would adequately cover the required one-third local government matching cost as provided under federal grants such as The Comprehensive Planning Assistance Program. The requirements for - and thus the cost of - undertaking much

of this work for the Pinelands Plan should be additionally diminished because of similar updating and conformance requirements under the Municipal Land Use Act of 1976 which these activities will absorb. Table IV-6 lists the date of various planning and zoning documents in each jurisdiction within the Pinelands as an indicator of the degree of conformance within each community. It does not, however, comment upon the quality of each of these documents, some of them having been recently developed only for the first time.

Due to the modifications in permitted land uses, local governments may well need to reassess the properties within their jurisdiction. Even without the Pinelands Plan, however, many tax districts' reevaluations and reassessments are overdue by State Division of Taxation standards; thus, as with planning costs, the costs associated with these activities should not be solely attributed to plan implementation government operations and revenue operating activities. Table IV-7 identifies the date and cost (where available) of each local governments' most recent reevaluation and reassessment. By state law, all independent contracts for reevaluation of a taxing jurisdiction's property base must be approved by the Director of the State Department of Taxation.

Discussions with state and local assessors and independent contractors were used to help estimate the costs of updating these property files. Accordingly, the reevaluation of a typical municipality will usually cost \$30 per improved property inspected, on a per parcel pricing basis, and less for the valuation of unimproved (e.g. vacant) properties. Assuming that half (26) of the Pinelands Communities will require reevaluations in the near future at an average cost of \$35000 per

TABLE IV- 6

## DATE OF PINELANDS AREA LOCAL GOVERNMENT PLANNING AND ZONING DOCUMENTS

	Master Plan	Zoning Ordinance	Subdivision Ordinance	Site Ordinance
Atlantic County				
Buena B.	1978	1979	1979	1979
Buena Vista Twp.	1979	1979	1979	1979
Corbin City	1978	0	0	0
Egg Harbor City	1978	1979	1975	1979
Egg Harbor Twp.	1975	1978	1979	1979
Estell Manor City	1977	1979	1979	1979
Folsom B.	1979	1979	1977	1978
Galloway Twp.	1978	1978	1978	1978
Hamilton Twp.	1978	1979	1978	1978
Hammontown Twp.	1979	1979	1976	1976
Mullica Twp.	1979	1979	1979	1979
Port Republic City	1979	1979	1979	1979
Weymouth Twp.	1976	1978	1978	0
Burlington County				
Bass River Twp.	1976	1960	1977	1960
Evesham Twp.	1978	1960	1974	1972
Medford Lakes B.	1979	1964	1979	1979
Medford Twp.	1978	1951	1951	1979
New Hanover Twp.	1979	1954	1954	0
North Hanover Twp.	1975	1965	1976	1976
Pemberton Twp.	1977	1931	0	0
Shamong Twp.	1975	1978	1978	1978
Southampton Twp.	0	0	0	0
Springfield Twp.	1968	1952	1954	1954
Tabernacle Twp.	1975	1956	1954	1973
Washington Twp.	0	0	0	0
Woodland Twp.	1979	1970	1969	1969
Wrightstown B.	0	0	0	0
Camden County				
Berlin B.	1979	1979	1979	1979
Berlin Twp.	1979	1976	1974	1974
Chesilhurst B.	1980	1979	1979	1979
Waterford Twp.	1979	1979	1979	1979
Winslow Twp.	1979	1979	1956	1979

TABLE IV-6  
cont'd

	Master Plan	Zoning Ordinance	Subdivision Ordinance	Site Ordinance
Cape May County				
Dennis Twp.	1977	1977	1977	1977
Middle Twp. (Reserve)	1979	1979	1979	1979
Upper Twp	1978	1976	1976	1976
Woodbine B.	1976	1978	1977	1979
Cumberland County				
Maurice River Twp.	1979	1979	1979	1979
Vineland City	1975	1978	1978	1978
Gloucester County				
Franklin Twp.	1978	1979	1979	1979
Monroe Twp.	1979	1979	1979	1979
Ocean County				
Barnegat Twp.	1978	1971	1979	1979
Beachwood B.	1974	1971	1971	1971
Berkeley Twp.	1979	1975	1975	1975
Dover (Reserve)	1976	1976	1976	1976
Eagleswood Twp.	1974	1978	1979	1978
Jackson Twp.	1978	1977	1977	1977
Lacey Twp.	1977	1974	1976	1976
Lakehurst B.	1976	1977	1977	1977
Little Egg Harbor Twp.	1978	1979	1979	1979
Manchester Twp.	1978	1975	1975	1975
Ocean Twp.	1974	1972	1971	1972
Plumsted Twp.	1976	1976	1976	1977
South Toms River B.	1971	1972	1975	1975
Stafford Twp.	1976	1977	1977	1977
Tuckerton (Reserve)	1978	1979	1979	1979

SOURCE: Date collected by counties for the New Jersey Department of Community Affairs.

TABLE IV-7

## DATE OF MOST RECENT VALUATION AND ASSESSMENT OF PROPERTY BY LOCAL PINELANDS AREA

	LOCAL GOVERNMENTS	
	Last Revaluation <sup>1</sup> (cost if available)	Last Reassessment <sup>2</sup>
Atlantic County		
Buena B.	1964 (\$8,300)	1974
Buena Vista Twp.	1973 (\$33,400)	1972
Corbin City	1962 (\$2,375)	1976
Egg Harbor City	1954	1977 (comprehensive)
Egg Harbor Twp.	1979 (\$30,000)	1979
Estell Manor City	1969 (\$10,700)	1976
Folsom B.	1970 (\$3,000)	1972
Galloway Twp.	1975 (\$58,500)	
Hamilton Twp.	1980 (\$92,000)	
Hammontown Twp.	1963 (\$35,000)	1972
Mullica Twp.	1964 (\$13,500)	1976
Port Republic City	1971 (\$5,000)	1972
Weymouth Twp.	1972 (\$5,800)	
Burlington County		
Bass River Twp.	1973 (\$12,250)	1978
Evesham Twp.	1980 (\$130,891)	
Medford Lakes B.	1972 (\$15,000)	1965
Medford Twp.	1977 (\$60,400)	
New Hanover Twp.	1972 (\$4,500)	1980
North Hanover Twp.	1975 (\$11,700)	
Pemberton Twp.	1974 (\$112,000)	1978
Shamong Twp.	1969 (\$3,000)	1980
Southampton Twp.	1969 (\$10,000)	1980
Springfield Twp.	1970 (\$11,500)	1975
Tabernacle Twp.	1974 (\$17,700)	1980
Washington Twp.	1974 (\$6,850)	1976
Woodland Twp.	1975 (\$16,500)	
Wrightstown B.	1972 (\$5,000)	
Camden County		
Berlin B.	1977 (\$23,300)	1971
Berlin Twp.	1976 (\$22,100)	1971
Chesilhurst B.	1978 (\$9,300)	1973
Waterford Twp.	1979 (\$40,800)	1971
Winslow Twp.	1975 (\$59,600)	1971



TABLE IV-7  
cont'd

	Last Revaluation <sup>1</sup>	(cost if available)	Last Reassessment <sup>2</sup>
Cape May County <sup>3</sup>			
Dennis Twp.	1975	(\$23,000)	
Middle Twp. (Reserve)		(\$106,900)	
Upper Twp	1978	(\$42,100)	
Woodbine B.	1974	(\$97,000)	
Cumberland County			
Maurice River Twp.	1963	(\$22,500)	1977
Vineland City	1959	(\$64,800)	1975
Gloucester County			
Franklin Twp.	1976	(\$67,900)	
Monroe Twp.	1975	(\$78,350)	
Ocean County			
Barneqat Twp.	1975	(\$26,400)	
Beachwood B.	1978	(\$30,930)	
Berkeley Twp.	1973	(\$124,000) <sup>(4)</sup>	
Dover (Reserve)	1971	(\$195,000)	1976
Eagleswood Twp.	1963	(\$4,000) <sup>(4)</sup>	1975
Jackson Twp.	1975	(\$127,300)	
Lacey Twp.	1974	(\$94,000) <sup>(4)</sup>	1980 (199,000)
Lakehurst B.	1976	(\$10,800)	
Little Egg Harbor Twp.	1973	(\$40,600)	
Manchester Twp.	1976	(\$85,000)	
Ocean Twp.	1972	(\$26,900)	1977
Plumsted Twp.	1976	(\$29,000)	1979
South Toms River B.	1971	(\$15,000)	1975
Stafford Twp.	1971	(\$54,000)	1975
Tuckerton (Reserve)	1971	(\$14,000)	

<sup>1</sup>Revaluations entail a reinspection and revaluation of properties in order to provide accurate information and reasonable uniformity for subsequent reassessments. Revaluations are undertaken by an outside appraisal firm under contract with the municipality.

<sup>2</sup>Reassessment is typically an in house activity to update property records from the last valuation.

<sup>3</sup>Each taxing district in Cape May County is under court order to obtain new revaluations.

<sup>4</sup>Currently under taking revaluation

SOURCE: New Jersey Department of Taxation.

taxing district, would render a \$910,000 total cost. For the other taxing districts within the Pinelands, it is anticipated that the costs of most annual reassessments associated with the plan's implementation can be met with existing staff resources. Or, if necessary, with minimal temporary or part-time additional resources.

## Public Capital Expenditures

The major costs of local governments in servicing new development are roads, water and sewer, schools and public facilities. New development can also mean significant costs in the form of air and water pollution, traffic congestion and over-crowded schools. These costs occur, mainly, because the capital improvements needed to avoid such costs are not made.

Experience has shown that different development patterns impose different levels of cost on local jurisdictions - both economic and non-economic. The Council on Environmental Quality, the U.S. Department of Housing and Urban Development and the Environmental Protection Agency jointly sponsored a massive study on this subject done by the Real Estate Research Corporation. This study, the Costs of Sprawl,\* inquired into the nature and level of costs to public and private bodies resulting from selected development forms. This analysis concluded that the highest capital costs - to local government - came from the low density sprawl form of development. The least costly form was high density planned development. The percentages were: substantially lower public and private costs. The Pinelands Plan will tend to encourage such savings by restricting leap-frog type development and redirecting it to regional growth districts and thus to compact areas when capital cost savings can be fully realized. In this manner, the Plan will tend to represent a significant fiscal benefit to local governments.

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\* The Cost of Sprawl, U.S. Government Printing Office, \$4111-00023, April, 1974.

# COMPARISON OF CAPITAL COSTS BY DEVELOPMENT TYPE

	<u>Total Capital Costs</u>	<u>Local Government Capital Cost</u>
Planned mix	124.5%	110.7%
Combination mix (PUD and sprawl)	128.3%	149.6%
Sprawl mix	129.9%	173.2%
Low density planned	170.6%	113.8%
Low density sprawl	179.2%	189.2%
High density planned	100.0%	100.0%

SOURCE: Costs of Sprawl: Executive Summary, U.S. Government Printing office, April, 1974, p.10

This table shows the relative costs of each form of development as a percentage of the least costly form. Minimum capital costs come from high density planned development (in this analysis high density planned development was 6.41 units per gross acre and 22 units per net residential acre.) Maximum capital costs are associated with low density sprawl (2.125 units per gross acre and 3.5 units per net acre - but configured in a leap-frog form - this is the typical form of suburban development.) It is interesting to note that low density planned and low density sprawl are the same density and the same type of unit. The difference is that sprawl is "leap-frog" or discontinuous and has higher capital costs as a result. Looking to the public sector costs, it is clear that both of the sprawled forms impose significantly higher costs on the public than do the planned forms - regardless of density. Allowing a sprawl form of development will tend to increase public capital costs by 89.1 over the most efficient form. Simply eliminating the leap frog form will reduce public capital costs by 40% less than what they would have been with sprawl. Such cost savings greatly benefit the fiscal situation of governments.

## APPENDICES

Table 1	General Population and Taxation Data for Pinelands Municipalities . . . . .	A - 1
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Table 2	Summary of Tax Base Matrix Analysis - Effects of Alternative Land Value Impact Assumptions on Real Estate Valuations by Municipality . . . . .	A - 3
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Tax Base Impact Matrices for Pinelands Municipalities		
	Key . . . . .	A - 6
	Municipal Tables . . . . .	A - 7

APPENDIX  
TABLE 1

GENERAL POPULATION & TAXATION DATA FOR PINELANDS MUNICIPALITIES

A-1

	1978 Pop	1978 Civil Tax Rate per \$100	1978 State Equ. Tax Rate per \$100	1978 State Equalization Ratio	1978 Total Tax Levy per cap
<b>Atlantic County</b>					
Buena B.	3235	3.36	2.58	76.77	373.48
Buena Vista Twp.	5302	3.57	2.52	70.64	404.36
Corbin City	303	2.14	2.01	94.02	248.77
Egg Harbor City	4534	2.90	3.21	110.68	286.34
Egg Harbor Twp.	15402	2.41	2.42	100.51	378.10
Estell Manor City	787	2.67	2.47	92.41	566.46
Folsom B.	2233	4.44	2.48	55.80	308.74
Galloway Twp.	10866	2.74	2.37	86.54	345.35
Hamilton Twp.	9511	3.67	2.38	64.88	361.25
Hammontown Twp.	12094	4.74	2.73	57.68	325.25
Mullica Twp.	3884	3.06	2.48	81.00	407.87
Port Republic City	846	3.70	1.91	51.64	337.29
Weymouth Twp.	1288	3.07	2.40	78.11	253.52
<b>Burlington County</b>					
Bass River Twp.	1069	2.48	2.34	94.29	699.37
Evesham Twp.	19466	4.00	2.58	64.44	436.85
Medford Lakes B.	6807	3.72	2.71	72.87	302.60
Medford Twp.	15095	2.69	2.61	97.09	485.71
New Hanover Twp.	14594	1.88	1.70	90.33	19.78
North Hanover Twp.	9506	1.86	1.80	96.96	66.13
Pemberton Twp.	28128	2.18	2.31	105.94	207.11
Shamong Twp.	3168	1.88	1.85	98.35	321.36
Southampton Twp.	9949	1.90	1.87	98.39	261.16
Springfield Twp.	14688	2.75	2.60	94.64	628.89
Tabernacle Twp.	4141	2.15	2.05	95.35	347.94
Washington Twp.	706	3.17	1.91	60.31	558.13
Woodland Twp.	2299	2.08	1.28	61.60	260.41
Wrightstown B.	2772	2.84	2.07	73.06	102.53
<b>Camden County</b>					
Berlin B.	5514	2.83	2.94	103.90	464.13
Berlin Twp.	6075	2.81	2.65	94.43	253.23
Chesilhurst B.	1488	2.53	2.99	117.99	261.20
Waterford Twp.	6331	4.54	2.55	56.06	369.23
Winslow Twp.	18554	2.51	2.58	102.84	324.77

Cape May County					
Dennis Twp.	3508	2.14	1.68	78.70	278.54
Middle Twp. (Reserve)	10449	3.30	2.22	67.26	293.94
Upper Twp	5778	.58	.51	87.49	145.06
Woodbine B.	2807	2.72	3.12	114.81	134.85
Cumberland County					
Maurice River Twp.	4670	4.24	3.03	71.46	215.94
Vineland City	52569	3.08	3.04	98.64	336.88
Gloucester County					
Franklin Twp.	10755	2.46	2.13	86.71	294.84
Monroe Twp.	12917	3.09	2.46	79.51	536.41
Ocean County					
Barneqat Twp.	7542	2.48	2.47	99.78	375.94
Beachwood B.	7447	2.55	2.74	107.49	337.86
Berkeley Twp.	17838	2.97	2.00	67.27	459.56
Dover (Reserve)	64518	3.15	2.48	78.86	507.73
Eagleswood Twp.	1009	3.16	2.41	76.30	502.69
Jackson Twp.	24762	2.77	2.81	101.48	380.03
Lacey Twp.	13267	1.51	1.10	72.98	289.91
Lakehurst B.	3799	3.18	3.30	103.84	189.04
Little Egg Harbor Twp.	7562	3.01	2.19	72.86	507.87
Manchester Twp.	23266	1.56	1.46	93.32	241.08
Ocean Twp.	4345	2.34	2.26	96.71	502.18
Plumsted Twp.	4814	2.20	1.91	86.73	198.16
South Toms River B.	4056	2.98	2.55	85.55	233.93
Stafford Twp.	9403	2.08	1.54	74.25	390.75
Tuckerton (Reserve)	3525	3.35	2.79	83.32	321.83

SOURCE: New Jersey Department of Community Affairs, Forty-Five Annual Report of Division of Local Government Service, 1978 (Trenton, N.J.:1978)

SUMMARY OF TAX BASE MATRIX ANALYSIS - EFFECTS OF ALTERNATIVE LAND VALUE IMPACT ASSUMPTIONS ON REAL ESTATE

VALUATIONS BY MUNICIPALITY

APPENDIX  
TABLE 2

Vacant Land as % of Total Real Estate Valuations

	Pre-Plan (1978) %	Average Impact 15% deprec./10% apprec. Total % Chg.	15% deprec./0% apprec. Total Chg.	Worse Impact 30% deprec./0% apprec. Total Chg.
<b>Atlantic County</b>				
Buena B.	2.45	2.39 - .06%	2.27 -1.18	2.08* - .37
Buena Vista Twp.	21.15	21.18 + .03	19.91 -1.25	18.64* -2.51
Corbin City	13.99	11.89* -2.10	11.89* -2.10	9.79* -4.20
Egg Harbor City	2.04	1.84* .20	1.80* - .24	1.55* - .49
Egg Harbor Twp.	15.27	15.60 + .33	14.55 - .72	13.83 -1.44
Estell Manor City	52.80	44.88* -7.92	44.88* -7.92	36.96* -15.84
Folsom B.	9.92	8.76* -1.16	8.63* -1.29	7.33* -2.59
Galloway Twp.	19.05	19.44 + .39	18.14 - .61	17.22 -1.83
Hamilton Twp.	3.14	2.96 - .18	2.84 .3	2.56* - .58
Hamontown Twp.	3.78	3.36* - .42	3.30* - .48	2.82* - .96
Mullica Twp.	22.44	21.17* -3.27	21.01* -3.43	17.59* -6.85
Port Republic City	14.01	11.91* -2.10	11.91* -2.10	9.81* -4.20
Weymouth Twp.	25.97	22.07* -3.90	22.07* -3.90	18.18* -7.79
<b>Burlington County</b>				
Bass River Twp.	36.56	31.26* -5.30	31.19* -5.37	25.81* -10.75
Evesham Twp.	8.85	9.54 + .69	8.73 - .12	8.61 - .24
Medford Lakes B.	.88	.97 + .08	.88 0	.88 - 0
Medford Twp.	11.88	12.62 + .74	11.61 - .27	11.35 .53
New Hanover Twp. (Ft. Dix)				
North Hanover Twp. (Ft. Dix)				
Pemberton Twp.	9.58	9.02 - .56	8.67 - .91	7.77* -1.81
Shamong Twp.	17.49	15.57* -1.92	15.29* -2.20	13.08* -4.41
Southampton Twp.	8.64	8.27 - .37	7.90 - .74	7.16* -1.48
Springfield Twp. (Ft. Dix)				
Tabernacle Twp.	18.76	16.89 -1.87	16.51* -2.25	14.26* -4.50
Washington Twp.	12.24	10.40* -1.84	10.40 -1.84	8.57* -3.67
Woodland Twp.	63.20	53.72* -9.48	53.72* -9.48	44.24* -18.96
Wrightstown B. (Ft. Dix)				
<b>Camden County</b>				
Berlin B.	5.80	6.38 + .58	5.80 0	5.80 0
Berlin Twp.	9.90	10.89 .99	9.90 0	9.90 0
Chesilhurst B.	16.30	17.93 1.63	16.30 0	16.30 0
Waterford Twp.	8.01	8.13 + .12	7.60 - .41	7.19* - .82
Winslow Twp.	15.70	15.31 - .39	14.52 -1.18	13.35* -2.35

(See p. 2 for explanatory note)



	Pre-Plan (1978)	Average Impact 15% deprec./10% apprec.		15% deprec./0% apprec.		Worse Impact 30% deprec./0% apprec.	
<b>Cape May County</b>							
Dennis Twp.	21.67	19.56	-2.11	19.10*	-2.57	16.53*	-5.14
Middle Twp. (Reserve)	11.59	10.30*	-1.29	10.13*	-1.46	8.67*	-2.92
Upper Twp	16.19	14.61	-1.58	14.27*	-1.92	12.35*	-3.84
Woodbine B.	8.16	8.69	+ .53	7.99	- .17	7.82	- .34
<b>Cumberland County</b>							
Maurice River Twp.	28.24	25.20*	-3.04	24.72*	-3.52	21.21*	-7.03
Vineland City	3.85	3.78	- .07	3.70	.15	2.94*	- .91
<b>Gloucester County</b>							
Franklin Twp.	13.31	13.44	+ .13	12.59	- .72	12.10	-1.21
Monroe Twp.	10.89	11.36	+ .47	10.52*	- .37	10.14*	- .75
<b>Ocean County</b>							
Barnegat Twp.	29.26	27.07*	-2.19	26.19*	-3.07	23.12*	-6.14
Beachwood B.	9.46	10.41	+ .95	9.46	0	9.46	0
Berkeley Twp.	12.40	11.81	- .59	11.30	-1.10	10.20*	-2.20
Dover (Reserve)	6.75	7.43	+ .68	6.75	0	6.75	0
Eagleswood Twp.	41.34	39.38	-1.96	37.68	-3.66	34.02*	-7.32
Jackson Twp.	17.42	17.38	- .04	16.36	-1.06	15.28*	-2.14
Lacey Twp.	22.70	19.92*	-2.78	19.67*	-3.03	16.64*	-6.06
Lakehurst B.	3.57	3.93	+ .37	3.57	0	3.57	0
Little Egg Harbor Twp.	13.03	12.38	- .65	11.86	-1.17	10.68*	-2.35
Manchester Twp.	13.49	12.48	-1.01	12.07*	-1.42	10.66*	-2.83
Ocean Twp.	15.89	15.69	- .20	14.82	-1.07	13.75*	-2.14
Plumsted Twp. (Ft. Dix)							
South Toms River B.	4.45	4.45	0	4.45	0	4.45	0
Stafford Twp.	28.70	26.62	-2.08	25.73*	-2.97	22.76*	-5.94
Tuckerton (Reserve)	9.68	10.65	+ .97	9.68	0	9.68	0

## Explanatory Notes:

1) Column 1 - Total non-farm vacant land valuation as of 1978.

2) Vacant land valuations are allocated between restricted and growth categories based on distribution of vacant land by district in the Pinelands.

Restricted districts include the Preservation Area, the Forest Areas and the Agricultural Production Area.

(continued )

Growth Areas include the Regional Growth and Rural Development areas and designated Pinelands Towns.

- 3) Average Case assumes 15% depreciation of "restricted" land and 10% appreciation "growth" lands. Worse Case assumes 30% depreciation and no appreciation.
- 4) No adjustment is made in the above table to exclude valuations for portions of municipalities outside the Pinelands.

# TAX BASE IMPACT MATRIX AND VALUATION ESTIMATES

Key:

Tax Base Impact Matrix

1978 Tax Base

Change in Value of  
Vacant Restricted Land

% Vacant Lands' Tax Base<sup>1</sup>  
Adjusted %<sup>2</sup>

		0%	-15%	-30%
Change in Value of Vacant Development Land	0%	No impact		Greatest Depreciation
	+10%		Average Impact	
	+25%	Greatest Appreciation		

Current %		Lowest %
	Mean %	
Highest %		

% of tax base in vacant non-public land \_\_\_\_\_  
% Less 10% \_\_\_\_\_

(Adjusted)

\* Jurisdictions with a 10% or greater  
reduction in residual vacant lands' tax base.

<sup>1</sup> % of tax base in vacant non-public, non-agricultural acreage

<sup>2</sup> % of tax base in vacant non-public, non-agricultural acreage,  
adjusted for % of municipality in the Pinelands.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

Atlantic  
County

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

BUENA BORO

		0%	-15%	-30%			
Change in value of Vacant Development Land	0	1.23	1.05	.86	2.45	2.27	2.08*
		1.22	1.22	1.22	1.16	1.07	.98*
	+10%	1.23	1.05	.86	2.57	2.39	2.20*
		1.34	1.34	1.34	1.21	1.12	1.03*
	+25%	1.23	1.05	.86	2.76	2.58	2.39
		1.53	1.53	1.53	1.30	1.21	1.12*

% of Tax Base in Vacant Land: (Adj.)  
 %, less 10%      2.45      1.16  
                          2.20      1.04

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

BUENA VISTA TWP.

		0%	-15%	-30%			
Change in value of Vacant Development Land	0	8.47	7.20	5.93	21.18	19.91	18.64*
		12.71	12.71	12.71	19.06	17.92	16.78*
	+10%	8.47	7.20	5.93	22.45	21.18	19.91
		13.98	13.98	13.98	20.21	19.06	17.92*
	+25%	8.47	7.20	5.93	24.36	23.09	21.82
		15.89	15.89	15.89	21.92	20.78	19.64

% of Tax Base in Vacant Land:      21.15      19.06  
 %, less 10%      19.06      17.15

\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

CORBIN CITY

Change in  
Value of  
Vacant  
Development<sup>1</sup>  
Land

+25%

0%	-15%	-30%
13.99 0	11.89 0	9.79 0
13.99 0	11.89 0	9.79 0
13.99 0	11.89 0	9.79 0

13.99	11.89*	9.79*
13.99	12.06*	10.13*
13.99	11.89*	9.79*
13.99	11.89	10.24*
13.99	11.89*	11.89*
13.99	11.89	11.89*

% of Tax Base in Vacant Land:

13.99

(Adj.)  
13.99

%, less 10%

12.59

12.59

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

EGG HARBOR CITY

Change in  
Value of  
Vacant  
Development<sup>1</sup>  
Land

+25%

0%	-15%	-30%
1.63 .41	1.39 .41	1.14 .41
1.63 .45	1.39 .45	1.14 .45
1.63 .51	1.39 .51	1.14 .51

2.04	1.80*	1.55*
2.04	1.80*	1.55*
2.08	1.84*	1.59*
2.08	1.84	1.59*
2.14	1.90	1.65*
2.14	1.90	1.65*

% of Tax Base in Vacant Land:

2.04

2.04

%, less 10%

1.84

1.84

\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

EGG HARBOR TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	4.81	4.09	3.37	15.27	14.55	13.83
		10.46	10.46	10.46	7.94	7.57*	7.19*
	+10%	4.81	4.09	3.37	16.32	15.60	14.88
		11.51	11.51	11.51	8.49	8.11*	7.74*
	+25%	4.81	4.09	3.37	17.87	17.17	16.45
		13.08	13.08	13.08	9.30	8.93*	8.55*

% of Tax Base in Vacant Land:

15.27

(Adj.) 7.94

%, less 10%

13.74

7.15

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

ESTELL MANOR CITY

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	52.80	44.88	36.96	52.80	44.88*	36.96*
		0	0	0	52.80	44.88*	36.96*
	+10%	52.80	44.88	36.96	52.80	44.88*	36.96*
		0	0	0	52.80	44.88*	36.96*
	+25%	52.80	44.88	36.96	52.80	44.88*	36.96*
		0	0	0	52.80	44.88*	36.96*

% of Tax Base in Vacant Land: 52.80

52.80

%, less 10%

47.52

47.52

\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

FOLSOM B.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	8.63	7.34	6.04	9.92	8.63*	7.33*
		1.29	1.29	1.29	9.92	8.63*	7.33*
	+10%	8.63	7.34	6.04	10.05	8.76*	7.46*
		1.42	1.42	1.42	10.05	8.76*	7.46*
	+25%	8.63	7.34	6.04	10.25	8.96	7.66*
		1.62	1.62	1.62	10.25	8.96	7.66*

% of Tax Base in Vacant Land: 9.92 (Adj.) 9.92  
 %, less 10% 8.93 8.93  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

GALLOWAY TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	6.10	5.19	4.27	19.05	18.14	17.22
		12.95	12.95	12.95	12.76	12.15*	11.54*
	+10%	6.10	5.19	4.27	20.60	19.44	18.52
		14.25	14.25	14.25	13.80	13.02*	12.41*
	+25%	6.10	5.19	4.27	22.29	21.38	20.46
		16.19	16.19	16.19	14.93	14.32*	13.71*

% of Tax Base in Vacant Land: 19.05 12.77  
 %, less 10% 17.14 11.49  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

HAMILTON TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	1.95	1.65	1.37	3.14	2.84 *	2.56*
		1.19	1.19	1.19	3.05	2.75 *	2.48*
	+10%	1.95	1.65	1.37	3.26	2.96 *	2.68*
		1.31	1.31	1.31	3.16	2.87 *	2.60*
	+25%	1.95	1.65	1.37	3.44	3.14*	2.68*
		1.49	1.49	1.31	3.34	3.05*	2.60*

% of Tax Base in Vacant Land: 22.70

%, less 10%

19.43

(Adj.)... 22.02

19.82

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

HAMMONTON TOWN

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	3.21 / .57	2.73 / .57	2.25 / .57	3.78 3.78	3.30* 3.30*	2.82* 2.82*
	+10%	3.21 / .63	2.73 / .63	2.25 / .63	3.84 3.84	3.36* 3.36*	2.88* 2.88*
	+25%	3.21 / .71	2.73 / .71	2.25 / .71	3.92 3.92	3.44 3.44	2.96 2.96*

% of Tax Base in Vacant Land: 3.78

%, less 10%

3.40

3.78

3.40

\* jurisdictions with reduction in residual lands tax base > 10%.



**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

MULLICA TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	22.85	19.42	16.00	24.44	21.01*	17.59*
		1.59	1.59	1.59	24.44	21.01*	17.59*
	+10%	22.85	19.42	16.00	24.60	21.17*	17.75*
		1.75	1.75	1.75	24.60	21.17*	17.75*
	+25%	22.85	19.42	16.00	24.84	21.41*	17.99*
		1.99	1.99	1.99	24.84	21.41*	17.99*

% of Tax Base in Vacant Land: 24.44 (Adj.) 24.44  
 %, less 10% 22.00 22.00  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

PORT REPUBLIC CITY

				0%	-15%	-30%			
Change in Value of Vacant Development Land	0	14.01	11.91	9.81	14.01	11.91*	9.81*		
		0	0	0	4.48	3.81*	3.14*		
	+10%	14.01	11.91	9.81	14.01	11.91*	9.81*		
		0	0	0	4.48	3.81*	3.14*		
	+25%	14.01	11.91	9.81	14.01	11.91*	9.81*		
		0	0	0	4.45	3.30*	3.14*		

% of Tax Base in Vacant Land: 14.01 4.48  
 %, less 10% 13.61 4.03  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

WEYMOUTH TWP.

		0%	-15%	-30%
Change in Value of Vacant Development Land	0	25.97 0	22.07 0	18.18 0
	+10%	25.97 0	22.07 0	18.18 0
	+25%	25.97 0	22.07 0	18.18 0

25.97	22.07*	18.18*
25.97	22.07*	18.18*
25.97	22.07*	18.18*
25.97	22.07*	18.18*
25.97	22.07*	18.18*

% of Tax Base in Vacant Land:  
%, less 10%

25.97

23.37

(Adj)  
25.97

23.37

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

		0%	-15%	-30%
0  +10%  +25%	0			
	+10%			
	+25%			


% of Tax Base in Vacant Land:  
%, less 10%

\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

**Est. New Valuations**

Burlington  
County

Change in Value of  
Vacant Restricted Land

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

BASS RIVER TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	35.83	30.46	25.08	36.56	31.19*	25.81*
		.73	.73	.73	36.56	31.19*	25.81*
	+10%	35.83	30.46	25.08	36.63	31.26*	25.88*
		.80	.80	.80	36.63	31.26*	25.88*
	+25%	35.83	30.46	25.08	36.74	31.37*	25.99*
		.91	.91	.91	36.74	31.37*	25.99*

% of Tax Base in Vacant Land: 36.56 (Adj) 36.56  
 %, less 10% 32.90 32.90  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

**Est. New Valuations**

Change in Value of  
Vacant Restricted Land

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

EVESHAM TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	.80	.68	.56	8.85	8.73	8.61
		8.05	8.05	8.05	5.98	6.55*	6.46*
	+10%	.80	.68	.56	9.66	9.54	9.92
		8.86	8.86	8.86	7.25	7.16*	7.74*
	+25%	.80	.68	.56	10.86	10.74	10.62
		10.06	10.06	10.06	8.15	8.06	7.97

% of Tax Base in Vacant Land: 8.85 6.64  
 %, less 10% 7.96 5.98  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

MEDFORD TWP.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	0			11.88	11.61	11.35
	1.78	1.51	1.25	11.88	11.61	11.35
	10.10	10.10	10.10	12.89	12.62	12.36
	+10%			12.89	12.62	12.36
	1.78	1.51	1.25	14.41	14.14	13.88
	11.11	11.11	11.11	14.41	14.14	13.88
+25%	1.78	1.51	1.25			
	12.63	12.63	12.63			

% of Tax Base in Vacant Land: 11.88 (Adj.)  
%, less 10% 10.69 9.15  
8.23

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

MEDFORD LAKES  
B.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	0			.88	.88	.88
	.0	.0	.0	.88	.88	.88
	.88	.88	.88	.97	.97	.97
	+10%			.97	.97	.97
	.0	.0	.0	1.10	1.10	1.10
	.97	.97	.97	1.10	1.10	1.10
+25%	.0	.0	.0			
	1.10	1.10	1.10			

% of Tax Base in Vacant Land: .88 .88  
%, less 10% 80 80

\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

NEW HANOVER TWP.

	0%	-15%	-30%
0			
Change in Value of Vacant Development +10% Land			
+25%			

LAND	AREA	
ENTIRELY	WITHIN	
FORT	DIX	

(Adj.)...

% of Tax Base in Vacant Land: 5.23

%, less 10% 4.71

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

NORTH HANOVER TWP.

	0%	-15%	-30%
0			
Change in Value of Vacant Development +10% Land			
+25%			

LAND	AREA	
ENTIRELY	WITHIN	
FORT	DIX	

% of Tax Base in Vacant Land: 6.70

%, less 10% 6.03

\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

PEMBERTON TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	6.04	5.13	4.23	9.58	8.67	7.77*
		3.54	3.54	3.54	8.72	7.89*	7.07*
	+10%	6.04	5.13	4.23	9.93	9.02	8.12*
		3.89	3.89	3.89	9.04	8.21*	7.39*
	+25%	6.04	5.13	4.23	10.47	9.56	8.66
		4.43	4.43	4.43	9.53	8.70	7.88*

% of Tax Base in Vacant Land: 9.58 (Adj.) 8.72  
 %, less 10% 8.62 7.85  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

SHAMONG TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	14.69	12.49	10.28	17.49	15.29*	13.08*
		2.80	2.80	2.80	17.49	15.29*	13.08*
	+10%	14.69	12.49	10.28	17.77	15.57*	13.36*
		3.08	3.08	3.08	17.77	15.57*	13.36*
	+25%	14.69	12.49	10.28	18.19	15.99	13.78*
		3.50	3.50	3.50	18.19	15.99	13.78*

% of Tax Base in Vacant Land: 17.49 17.49  
 %, less 10% 15.74 15.74  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

SOUTHAMPTON TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	4.92	4.18	3.44	8.64	7.90	7.16*
		3.72	3.72	3.72	6.39	5.85*	5.30*
		4.92	4.18	3.44	9.01	8.27	7.53*
	+10%	4.09	4.09	4.09	6.67	6.12*	5.57*
		4.92	4.18	3.44	9.57	8.83	8.09
	+25%	4.65	4.65	4.65	7.08	6.53*	5.99*

% of Tax Base in Vacant Land: 8.64  
%, less 10% 7.78

(Adj.) 6.39  
5.75

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

SPRINGFIELD TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0				LAND	AREA	
	+10%				ENTIRELY	WITHIN	
	+25%				FORT	DIX	

% of Tax Base in Vacant Land: 4.31  
%, less 10% 3.88

(Adj.)

\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

TABERNACLE TWP.

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

	0%	-15%	-30%			
Change in Value 0 of Vacant Development Land	15.01	12.76	10.51	18.76	16.51*	14.26*
	3.75	3.75	3.75	18.76	16.51*	14.26*
	15.01	12.76	10.51	19.14	16.89	14.64*
	4.13	4.13	4.13	19.14	16.89	14.64*
	15.01	12.76	10.51	19.70	17.45	15.20*
	4.69	4.69	4.69	19.70	17.45	15.20*

(Adj:)

% of Tax Base in Vacant Land: 18.76      18.76  
 %, less 10%      16.88      16.88  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

WASHINGTON TWP.

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

	0%	-15%	-30%			
Change in Value 0 of Vacant Development Land	12.24	10.40	8.57	12.24	10.40*	8.57*
	0	0	0	12.24	10.40*	8.57*
	12.24	10.40	8.57	12.24	10.40*	8.57*
	0	0	0	12.24	10.40*	8.57*
	12.24	10.40	8.57	12.24	10.40*	8.57*
	0	0	0	12.24	10.40*	8.57*

(Adj)

% of Tax Base in Vacant Land: 12.24      12.24  
 %, less 10%      11.02      11.02  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.



**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

WOODLAND TWP.

Change  
in Value  
of Vacant  
Development 0  
Land

+10%

+25%

	0%	-15%	-30%
0	63.20 0	53.72 0	44.24 0
+10%	63.20 0	53.72 0	44.24 0
+25%	63.20 0	53.72 0	44.24 0

63.20	53.72*	44.24*
63.20	53.72*	44.24*
63.20	53.72*	44.24*
63.20	53.72*	44.24*
63.20	53.72*	44.24*

% of Tax Base in Vacant Land: 63.20 (Adj) 63.20  
 %, less 10% 56.88 56.88  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

WRIGHTSTOWN  
B.

Change  
in Value  
of Vacant 0  
Development  
Land

+10%

+25%

	0%	-15%	-30%
0			
+10%			
+25%			

LAND	AREA	
ENTIRELY	WITHIN	
FORT	DIX	

% of Tax Base in Vacant Land: 3.11  
 %, less 10% 2.80  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

Camden  
County

Tax Base Impact Matrix

Est. New Valuations

Change in Value of  
Vacant Restricted Land

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

BERLIN B.

Change  
in Value  
of Vacant  
Development  
Land

+10%

+25%

	0%	-15%	-30%
0	.0 5.80	.0 5.80	.0 5.80
+10%	.0 6.38	.0 6.38	.0 6.38
+25%	.0 7.25	.0 7.25	.0 7.25

5.80 .58	5.80 .58	5.80 .58
6.38 .64	6.38 .64	6.38 .64
7.25 .73	7.25 .73	7.25 .73

(Adj).....

% of Tax Base in Vacant Land: 5.80 .58

%, less 10% 5.22 .52

\* jurisdictions with reduction in residual lands tax base > 10%.

Tax Base Impact Matrix

Est. New Valuations

Change in Value of  
Vacant Restricted Land

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

BERLIN TWP.

Change  
in Value  
of Vacant  
Development  
Land

+10%

+25%

	0%	-15%	-30%
0	.0 9.90	.0 9.90	.0 9.90
+10%	.0 10.89	.0 10.89	.0 10.89
+25%	.0 12.38	.0 12.38	.0 12.38

9.90 1.51	9.90 1.51*	9.90 1.51*
10.89 1.85	10.89 1.85*	10.89 1.85*
12.38 2.10	12.38 2.10*	12.38 2.10*

(Adj).....

% of Tax Base in Vacant Land: 9.90 1.68

%, less 10% 8.91 1.51

\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

CHESILHURST B.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	0	0	0	16.30	16.30	16.30
	16.30	16.30	16.30	16.30	16.30	16.30
	0	0	0	17.93	17.93	17.93
	17.93	17.93	17.93	17.93	17.93	17.93
	0	0	0	20.38	20.38	20.38
	20.38	20.38	20.38	20.38	20.38	20.38

% of Tax Base in Vacant Land:  $\frac{16.30}{16.30}$   
%, less 10%  $\frac{14.67}{14.67}$   
\* jurisdictions with reduction in residual lands tax base  $\geq 10\%$ .

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

WATERFORD TWP.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	2.72	2.31	1.90	8.01	7.60	7.19*
	5.29	5.29	5.29	8.01	7.60	7.19*
	2.72	2.31	1.90	8.54	8.13	7.72*
	5.82	5.82	5.82	8.54	8.13	7.72*
	2.72	2.31	1.90	9.33	8.92	8.51
	6.61	6.61	6.61	9.33	8.92	8.51

% of Tax Base in Vacant Land:  $\frac{8.01}{8.01}$   
%, less 10%  $\frac{7.21}{7.21}$   
\* jurisdictions with reduction in residual lands tax base  $\geq 10\%$ .

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

WINSLOW TWP.

	0%	-15%	-30%			
Change in Value 0 of Vacant Development Land	7.85	6.67	5.50	15.70	14.52	13.35*
	7.85	7.85	7.85	12.56	11.62*	10.68*
	7.85	6.67	5.50	16.49	15.31	14.14*
	8.64	8.64	8.64	13.19	12.25*	11.31*
	7.85	6.67	5.50	17.66	16.48	15.31
	9.81	9.81	9.81	14.13	13.18*	12.25*

% of Tax Base in Vacant Land: 15.7 (Adj) 12.56  
 %, less 10% 14.13 11.33  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

	0%	-15%	-30%			
Change in Value 0 of Vacant Development Land						
+10%						
+25%						

% of Tax Base in Vacant Land: \_\_\_\_\_  
 %, less 10% \_\_\_\_\_  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

Cape May  
County

Tax Base Impact Matrix

Change in Value of  
Vacant Restricted Land

Est. New Valuations

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

DENNIS TWP.

Change  
in Value  
of Vacant  
Development  
Land

+10%

+25%

	0%	-15%	-30%
0	17.12 4.55	14.55 4.55	11.98 4.55
+10%	17.12 5.01	14.55 5.01	11.98 5.01
+25%	17.12 5.69	14.55 5.69	11.98 5.69

21.67	19.10*	16.53*
18.64	16.43*	14.22*
22.13	19.56	16.99*
19.03	16.82*	14.61*
22.81	19.62	17.67*
19.33	16.87*	15.20*

(Adj) ...  
% of Tax Base in Vacant Land: 21.67 18.64  
%, less 10% 19.50 16.78  
\* jurisdictions with reduction in residual lands tax base > 10%.

Tax Base Impact Matrix

Change in Value of  
Vacant Restricted Land

Est. New Valuations

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

MIDDLE TWP.

Change  
in Value  
of Vacant  
Development  
Land

+10%

+25%

	0%	-15%	-30%
0	9.74 1.85	8.28 1.85	6.82 1.85
+10%	9.74 2.04	8.28 2.04	6.82 2.04
+25%	9.74 2.31	8.28 2.31	6.82 2.31

11.59	10.13*	8.67*
2.43	2.13*	1.82*
11.78	10.30*	8.86*
2.47	2.16*	1.86*
12.05	10.57	9.13*
2.53	2.22*	1.92*

% of Tax Base in Vacant Land: 11.59 2.43  
%, less 10% 10.43 2.19  
\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

UPPER TWP.

Change  
in Value  
of Vacant  
Development  
Land

	0%	-15%	-30%			
0	12.79 3.40	10.87 3.40	8.95 3.40	16.19	14.27*	12.35*
+10%	12.79 3.74	10.87 3.74	8.95 3.74	16.53	14.61	12.69*
+25%	12.79 4.25	10.87 4.25	8.95 4.25	17.04	15.12	13.20*
				13.60	11.99*	10.37*
				13.89	12.27*	10.66*
				14.31	12.70*	11.09*

(Adj)  
% of Tax Base in Vacant Land: 16.19      13.60  
%, less 10%      14.57      11.24  
\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

WOODBINE TWP.

Change  
in Value  
of Vacant  
Development  
Land

	0%	-15%	-30%			
0	1.14 7.02	.97 7.02	.80 7.02	8.16	7.99	7.82
+10%	1.14 7.72	.97 7.72	.80 7.72	8.16	7.99	7.82
+25%	1.14 8.78	.97 8.78	.80 8.78	8.86	8.69	8.52
				8.86	8.69	8.52
				9.92	9.75	9.58
				9.92	9.75	9.58

% of Tax Base in Vacant Land: 8.16      8.16  
%, less 10%      7.34      7.34  
\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

	<u><b>Tax Base Impact Matrix</b></u>	<u><b>Est. New Valuations</b></u>
<u>Cumberland County</u>	Change in Value of Vacant Restricted Land	% of 1978 Vacant Land Tax Base <sup>1</sup> & Adjusted % <sup>2</sup>

MAURICE RIVER TWP.

Change in Value of Vacant Development Land  0  +10%  +25%	0%	-15%	-30%			
	23.44	19.92	16.41	28.24	24.72*	21.21*
	4.80	4.80	4.80	25.70	22.50*	19.30*
	23.44	19.92	16.41	28.72	25.20*	21.69*
	5.28	5.28	5.28	26.14	22.93*	19.74*
	23.44	19.92	16.41	29.44	25.92	22.41*
	6.00	6.00	6.00	26.79	23.59*	20.39*

(Adj.)

% of Tax Base in Vacant Land:	28.24	25.70	
% , less 10%	25.42	23.13	

\* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

	<u><b>Tax Base Impact Matrix</b></u>	<u><b>Est. New Valuations</b></u>
	Change in Value of Vacant Restricted Land	% of 1978 Vacant Land Tax Base <sup>1</sup> & Adjusted % <sup>2</sup>

VINELANDS CITY

Change in Value of Vacant Development Land  0  +10%  +25%	0%	-15%	-30%			
	3.04	2.89	2.13	3.85	3.70	2.94*
	.81	.81	.81	.27	.26*	.21*
	3.04	2.89	2.13	3.93	3.78	3.02*
	.89	.89	.89	.28	.26	.21*
	3.04	2.89	2.13	4.05	3.90	3.14*
	1.01	1.01	1.01	.28	.27*	.22*

% of Tax Base in Vacant Land:	3.85	.27	
% , less 10%	3.46	.24	

\* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

Gloucester  
County

Tax Base Impact Matrix

Change in Value of  
Vacant Restricted Land

Est. New Valuations

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

FRANKLIN TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	4.79 8.52	4.07 8.52	3.58 8.52	13.31 4.79	12.59 4.53*	12.10 4.36*
	+10%	4.79 9.37	4.07 9.37	3.58 9.37	14.16 5.10	13.44 4.84*	12.95 4.66*
	+25%	4.79 10.65	4.07 10.65	3.58 10.65	15.44 5.56	14.72 5.30*	14.23 5.12*

% of Tax Base in Vacant Land:  $\frac{13.31}{11.98} = 1.11$  (Adj.)  
 %, less 10%  $\frac{4.79}{4.31} = 1.11$   
 \* jurisdictions with reduction in residual lands tax base  $\geq 10\%$ .

Tax Base Impact Matrix

Change in Value of  
Vacant Restricted Land

Est. New Valuations

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

MONROE TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	2.50 8.39	2.13 8.39	1.75 8.39	10.89 7.30	10.52 7.05*	10.14 6.79*
	+10%	2.50 9.23	2.13 9.23	1.75 9.23	11.73 7.86	11.36 7.61*	10.98 7.36*
	+25%	2.50 10.49	2.13 10.49	1.75 10.49	12.99 8.70	12.62 8.46*	12.24 8.20*

% of Tax Base in Vacant Land:  $\frac{10.89}{9.80} = 1.11$  (Adj.)  
 %, less 10%  $\frac{7.30}{6.57} = 1.11$   
 \* jurisdictions with reduction in residual lands tax base  $\geq 10\%$ .



**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

Ocean  
County

**Tax Base Impact Matrix**

**Est. New Valuations**

Change in Value of  
Vacant Restricted Land

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

BARNEGAT TWP.

	0%	-15%	-30%			
Change in Value of Vacant 0 Development Land	20.48	17.41	14.34	29.26	26.19 *	23.12 *
	8.78	8.78	8.78	29.26	26.19 *	23.12 *
	20.48	17.41	14.34	30.14	27.07 *	24.00 *
	9.66	9.66	9.66	30.14	27.07 *	24.00 *
	20.48	17.41	14.34	31.46	28.39	25.32 *
	10.98	10.98	10.98	31.46	28.39	25.32 *

% of Tax Base in Vacant Land: 29.26 (Adj) 29.26  
 %, less 10% 27.33 27.33  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

**Est. New Valuations**

Change in Value of  
Vacant Restricted Land

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

BEACHWOOD TWP.

	0%	-15%	-30%			
Change in Value of Vacant 0 Development Land	0	0	0	9.46	9.46	9.46
	9.46	9.46	9.46	2.27	2.27 *	2.27 *
	0	0	0	10.41	10.41	10.41
	10.41	10.41	10.41	2.50	2.50 *	2.50 *
	0	0	0	11.45	11.45	11.45
	11.45	11.45	11.45	2.75	2.75 *	2.75 *

% of Tax Base in Vacant Land: 9.46 (Adj) 2.27  
 %, less 10% 8.51 2.04  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

BERKELEY TWP.

	0%	-15%	-30%				
Change in Value of Vacant 0 Development Land	0	7.32	6.22	5.12	12.40	11.30	10.20*
		5.08	5.08	5.08	6.57	5.99*	5.41*
	+10%	7.32	6.22	5.12	12.91	11.81	10.71*
		5.59	5.59	5.59	6.84	6.26*	5.68*
	+25%	7.32	6.22	5.12	13.67	12.57	11.47
		6.35	6.35	6.35	7.25	6.66*	6.09*

% of Tax Base in Vacant Land: 12.40      6.57 (Adj.)  
 %, less 10%      11.26      5.91  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

DOVER (RESERVE)

	0%	-15%	-30%			
Change in Value of Vacant Development Land	0	0	0	6.75	6.75	6.75
		6.75	6.75	.20	.20*	.20*
	+10%	0	0	7.43	7.43	7.43
		7.43	7.43	.22	.22*	.22*
	+25%	0	0	8.44	8.44	8.44
		8.44	8.44	.25	.25*	.25*

% of Tax Base in Vacant Land: 6.75      .20 (Adj.)  
 %, less 10%      6.07      .18  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

ENGLESWOOD TWP.

	0%	-15%	-30%			
Change in Value of Vacant 0 Development Land	24.39	20.73	17.07	41.34	37.68	34.02*
	16.95	16.95	16.95	41.34	37.68	34.02*
	24.39	20.73	17.07	43.04	39.38	35.72*
	18.65	18.65	18.65	43.04	39.38	35.72*
	24.39	20.73	17.07	45.58	41.92	38.26
	21.19	21.19	21.19	45.58	41.92	38.26

(Adj)...

% of Tax Base in Vacant Land: 41.34      41.34  
 %, less 10%      37.21      37.21  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

JACKSON TWP.

	0%	-15%	-30%			
Change in Value of Vacant 0 Development Land	7.14	6.07	5.00	17.42	16.36	15.28*
	10.28	10.28	10.28	9.58	8.99*	8.40*
	7.14	6.07	5.00	18.45	17.38	16.31
	11.31	11.31	11.31	10.15	9.56*	8.97*
	7.14	6.07	5.00	19.99	18.92	17.85
	12.85	12.85	12.85	10.99	10.41*	9.82*

(Adj)

% of Tax Base in Vacant Land: 17.42      9.58  
 %, less 10%      15.68      8.62  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

LACEY TWP.

	0%	-15%	-30%			
Change in Value of Vacant 0 Development Land	20.20	17.17	14.14	22.70	19.67*	16.64*
	2.50	2.50	2.50	22.70	19.67*	16.64*
	20.20	17.17	14.14	22.95	19.92*	16.89*
	2.75	2.75	2.75	22.95	19.92*	16.89*
	20.20	17.17	14.14	23.33	20.30*	17.27*
	3.13	3.13	3.13	23.33	20.30*	17.27*

% of Tax Base in Vacant Land: 22.70 (Adj)... 22.70  
 %, less 10% 20.43 20.43  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

LAKEHURST B.

	0%	-15%	-30%			
Change in Value of Vacant 0 Development Land	0	0	0	3.57	3.57	3.57
	3.57	3.57	3.57	3.57	3.57	3.57
	0	0	0	3.93	3.93	3.93
	3.93	3.93	3.93	3.93	3.93	3.93
	0	0	0	4.46	4.46	4.46
	4.46	4.46	4.46	4.46	4.46	4.46

% of Tax Base in Vacant Land: 3.57 (Adj)... 3.57  
 %, less 10% 3.21 3.21  
 \* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

LITTLE EGG HARBOR TWP.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	7.82	6.65	5.47	13.03	11.86	10.68*
	5.21	5.21	5.21	13.03	11.86	10.68*
	7.82	6.65	5.47	13.55	12.38	11.20*
	5.73	5.73	5.73	13.55	12.38	11.20*
	7.82	6.65	5.47	14.33	13.16	11.98
	6.51	6.51	6.51	14.33	13.16	11.98

% of Tax Base in Vacant Land: 13.03      13.03 (Adj)  
 %, less 10%      11.73      11.73  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

MANCHESTER TWP.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	9.44	8.02	6.61	13.49	12.07*	10.66*
	4.05	4.05	4.05	11.74	10.50*	9.27*
	9.44	8.02	6.61	13.90	12.48	11.07*
	4.46	4.46	4.46	12.09	10.86*	9.63*
	9.44	8.02	6.61	14.50	13.08	11.67*
	5.06	5.06	5.06	12.62	11.38*	10.15*

% of Tax Base in Vacant Land: 13.49      11.74 (Adj)  
 %, less 10%      12.14      10.57  
 \* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

OCEAN TWP.

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	7.15	6.08	5.01	15.89	14.82	13.75*
		8.74	8.74	8.74	15.89	14.82	13.75*
		7.15	6.08	5.01	16.76	15.69	14.62
	+10%	9.61	9.61	9.61	16.76	15.69	14.62
		+25%	7.15	6.08	5.01	18.08	17.01
	10.93		10.93	10.93	18.08	17.01	15.94

% of Tax Base in Vacant Land: 15.89 (Adj) 15.89  
%, less 10% 14.30 14.30

\* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

PLUMSTED TWP.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	0				LAND	AREA
					ENTIRELY	WITHIN
					FORT	DIX
	+10%					
	+25%					

% of Tax Base in Vacant Land: 8.19 (Adj) 8.19  
%, less 10% 7.37 7.37

\* jurisdictions with reduction in residual lands tax base  $\geq$  10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

SOUTH TOM'S RIVER B.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	0	0	0	4.45	4.45	4.45
	4.45	4.45	4.45	2.36	2.36*	2.36*
	0	0	0	4.90	4.90	4.90
+10%	4.90	4.90	4.90	2.60	2.60*	2.60*
+25%	0	0	0	5.56	5.56	5.56
	5.56	5.56	5.56	2.95	2.95*	2.95*

(Adj)

% of Tax Base in Vacant Land: 4.45      2.36  
%, less 10%      4.00      2.12

\* jurisdictions with reduction in residual lands tax base > 10%.

**Tax Base Impact Matrix**

Change in Value of  
Vacant Restricted Land

**Est. New Valuations**

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

STAFFORD TWP.

	0%	-15%	-30%			
Change in Value of Vacant Development Land	19.80	16.83	13.86	28.70	25.73*	22.76*
	8.90	8.90	8.90	28.70	25.73*	22.76*
	19.80	16.83	13.86	29.59	26.62	23.65*
+10%	9.79	9.79	9.79	29.59	26.62	23.65*
+25%	19.80	16.83	13.86	30.93	27.96	24.99*
	11.13	11.13	11.13	30.93	27.96	24.99*

(Adj)

% of Tax Base in Vacant Land: 28.70      28.70  
%, less 10%      25.83      25.83  
\* jurisdictions with reduction in residual lands tax base > 10%.

**TAX BASE IMPACT MATRICES FOR  
PINELANDS COUNTIES AND MUNICIPALITIES**

Tax Base Impact Matrix

Change in Value of  
Vacant Restricted Land

Est. New Valuations

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

TUCKERTON (RESERVE)

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0	0	0	0	9.68	9.68	9.68
		9.68	9.68	9.68	9.68	9.68	9.68
	+10%	0	0	0	10.65	10.65	10.65
		10.65	10.65	10.65	10.65	10.65	10.65
	+25%	0	0	0	12.10	12.10	12.10
		12.10	12.10	12.10	12.10	12.10	12.10

(Adj).....

% of Tax Base in Vacant Land: 9.68      9.68

%, less 10%      8.71      8.71

\* jurisdictions with reduction in residual lands tax base > 10%.

Tax Base Impact Matrix

Change in Value of  
Vacant Restricted Land

Est. New Valuations

% of 1978 Vacant  
Land Tax Base<sup>1</sup> &  
Adjusted %<sup>2</sup>

		0%	-15%	-30%			
Change in Value of Vacant Development Land	0						
	+10%						
	+25%						

(Adj).....

% of Tax Base in Vacant Land: \_\_\_\_\_

%, less 10%      \_\_\_\_\_

\* jurisdictions with reduction in residual lands tax base > 10%.



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